

THE PUBLIC HEALTH

Report of the

DEPARTMENT OF HEALTH

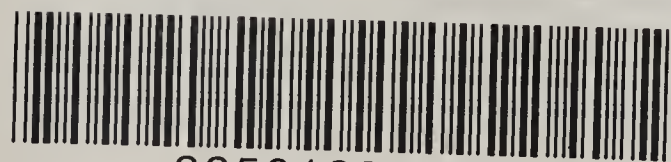
for the year ended

31 March 1984

*Presented to the House of Representatives Pursuant to Section 10 of the
Health Act 1956*

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REPORT

THE DIRECTOR-GENERAL OF HEALTH TO THE MINISTER OF HEALTH,
WELLINGTON.

Pursuant to section 10 of the Health Act 1956, I have the honour to lay before you the annual report of the department for the year 1983-84.

INTRODUCTION

In my introduction to the 1982-83 report I commented upon those general factors which have influenced health and health services in New Zealand over the last 5 decades. Remarkable progress has been made. Achievements in the field of infectious disease have been spectacular.

In the years ahead there is good reason to believe that technical innovation and developments in science and health services will continue, but it is doubtful whether we will again see anything as spectacular as the events which followed the advent of antibiotics. Single or simple solutions are not likely to be found to the problems of environmental protection, health promotion, and lifestyle diseases such as alcoholism, motor vehicle accidents, cardio-vascular disease, and disordered mental health. Progress in these areas requires concerted and well orchestrated efforts which bring together all the resources of the health sector and involves and commits other sectors of the economy. To advocate effectively for health, health workers must be aware of developments and work with those engaged in areas such as education, justice, social welfare, Maori affairs, transport, and labour.

Significant steps to better orchestrate the health effort have taken place in the last year.

On 1 April 1983 the Government moved to introduce a population-based funding method for allocating resources to hospital boards. The development of an acceptable formula has not been without its problems. Hospital boards vary greatly in size and the range of services provided. The public/private mix is different in different areas. Funding would be much simpler if more formal arrangements existed for regional provision of the more expensive services. Introduction would have been easier at a time when there was regular growth in the resources available to the health services. Nevertheless, most people now accept that the new method is a major step toward equity in the allocation of health resources.

Equitable resource allocation is not the only advantage of the new funding method, however. Now, for the first time, there is a sound epidemiological basis for the planning and management of health

services. Funded now on a "capitation" rather than a "fee-for-service" basis, hospital boards are beginning to realise that they have a vested interest in the health of their catchment population and not just in episodes of illness requiring hospital care.

If health protection and health promotion services are poorly provided—if primary health care in its many dimensions is weak—if the goodwill and resources of the private and voluntary sectors are not mobilised and well co-ordinated with the public sector—then it is the hospital boards at the end of the day which must bear the cost by way of an increased provision of institutional care and must do so within the resources allocated.

Once the full implications of the changed funding method are recognised I believe we will see hospital boards moving to take a much broader view of their responsibilities than they have done in the past. Apart from anything else it is now clearly in their economic interest to do so. Recent hospital board initiatives in areas such as Maori health, women's health, alcohol and drug abuse, community mental health, child health, and the elderly already provide clear evidence that this is beginning to happen. If in the light of these developments hospital boards become interested in and concerned with health protection, health promotion, and primary health care activities in their catchment areas it is but a short step to the realisation that there could be real advantage in becoming area health boards. With the Area Health Boards Act 1983 coming into force this is now possible.

The 1983-84 year has seen the culmination of a number of long-standing initiatives to improve the organisation and delivery of health services. Population-based funding of hospital boards is in place, the first service planning guidelines have been produced, and strategic and service planning is under way in most boards.

Discussions are soon to begin with the first hospital board interested in becoming an area health board. The Health Service Personnel Commission appointed under the Health Service Personnel Act 1983 assumes its responsibilities from 1 April 1984 and the reconstituted Board of Health has been appointed.

With these institutional changes the stage is now set for the improved integration of health services. The delivery of quality health care—in its widest sense—remains, however, a co-operative effort among providers in the private, voluntary, and public sectors. As a people we are well served by the innovative way in which all 3 are responding to the issues of the 1980s.

R. A. BARKER, Director-General of Health.

CHAPTER 1

HEARING

Deafness prevention has been a priority within the Bureau of Public Health and Environmental Protection since 1978, reflecting the department's concern about the prevalence of hearing impairment among people of all ages in New Zealand. This chapter provides a record of the measures taken during this time to reduce hearing loss, ensure its early detection, and improve its management.

The department would also like to take the opportunity to acknowledge the substantial contribution made by the large number of other government and voluntary organisations and individuals who have been working over many years to improve the hearing of New Zealanders. In particular, it wishes to record its appreciation of the work of Dr P. W. Eisdell Moore in the reduction of chronic suppurative otitis media among Maori children over recent years by both his work on the East Coast and his initiatives leading to the introduction of mobile ear clinics.

Committee on Hearing An important step towards improving the co-ordination of existing fragmented services and ensuring that these services meet present needs was taken in 1981, with the constitution of the Committee on Hearing of the Board of Health to provide advice to the Minister. The department has also encouraged the formation of local hearing committees, and to date such committees are active in Dunedin, Christchurch, and Wellington health districts.

The Committee on Hearing has collected and collated available statistics on hearing loss in New Zealand, but the nature and extent of the problem still remain rather ill defined. A scheme which requires the voluntary notification of children found to be deaf and their relevant background data was introduced in 1983. This, together with improved screening programmes, should result in more and better information becoming available.

The committee has suggested that further consideration should be given to 4 specific issues: prelingual deafness; otitis media in childhood; acquired hearing impairment in adults; and noise-induced hearing loss.

Prelingual Deafness Prelingual deafness occurs when a child is born deaf or becomes deaf before speech develops.

The incidence of prelingual deafness reduced from 1.7 per thousand births in 1959 to 1.1 per thousand in 1976. In about half the cases the cause is not known; the rest are caused by hereditary factors, perinatal asphyxia, jaundice, ototoxic drugs, or rubella and other infections.

Where hearing impairment is not prevented, early detection is essential so that adequate management can be given. The earlier detection occurs, the greater the likely gains in speech and language skills. In 1973 only 11 percent of deaf children were diagnosed before their first birthday and nearly half remained undetected by 3 years of age; now an estimated 29 percent are diagnosed before their first birthday.

Various measures have been taken to improve the detection rate still further. In 1982 a neonatal deafness screening programme was started. Doctors and nurses are asked to identify newborn babies with various risk factors—heredity, rubella, immaturity, malformation, jaundice, meningitis, and severe asphyxia. Babies with these risk factors have a far greater likelihood of deafness and, once identified, are kept under surveillance to ensure that their hearing is fully checked during the first year of life.

Greatest improvement is expected to come from increasing the awareness of parents and health professionals of the problem, with full audiological investigation for children in whom there is any suspicion of deafness. The *Health and Development Record*, which since June 1982 has been issued free to parents on the birth of each child, contains information to alert parents to the possibility of deafness.

Some cases of congenital deafness are familial and may be prevented by adequate genetic counselling. This topic is covered in *Recording Child Health and Development*, to be published by the department in 1984. Doctors are being encouraged to have the cause of every case of congenital deafness investigated; a protocol for this is being tested by the National Acoustics Centre and the Otological Department at Greenlane Hospital. If a genetic cause is suspected, referral to a specialist or medical geneticist is advised.

The counselling of deaf adolescents before they leave school is also recognised to be important, and this is a matter which will receive the consideration of the Committee on Hearing.

Reference has been made to the need for adequate audiological assessment, which is vital for the success of hearing programmes. Audiological services are now provided in the ear, nose, and throat departments of most major hospitals. To increase the number of audiologists available, each year since 1982 the department has provided the salary and expenses for up to 4 students to undertake the 1-year audiology course in Melbourne. This has resulted in an expansion of audiological services throughout the country.

Otitis Media in Childhood Chronic suppurative otitis media (CSOM), which often leads to hearing impairment, has long been a problem especially in Maori children in the central and northern North Island. It has now reduced markedly in most areas, largely

because parents are much more aware of the need for early treatment of acute earache and because more facilities for diagnosis and treatment are available. Continuing education and the provision of services such as nurse examination and mobile ear clinics have all helped.

As a result of recent studies, expanded screening programmes, and better diagnostic equipment, otitis media with effusion (OME) is now known to be very common in children up to 7 years of age. This and the resulting hearing impairment is often temporary, but in some children it persists and may cause a significant handicap.

The cause of OME is not well understood, but it may be associated with the posture of the infant during feeding and sleep and/or with the occurrence of repeated attacks of acute otitis media and the use of antibiotics. Preventive measures are uncertain, although keeping the head up during feeding and sleep has been suggested. Early detection and thorough follow-up, with a surgical procedure if significant hearing loss persists, is current practice. However, treatment is controversial and methods vary throughout the country.

In its South Island pilot programme, the department is testing the feasibility of introducing tympanometry as part of a screening programme for children aged 3, 5, and 7 years. Should this prove practical and useful, this type of screening will be extended over the country as resources allow. Serial testing, which will avoid referral of children with a temporary hearing loss and thus reduce waiting list time, is being introduced into screening programmes throughout the country.

This necessary expansion of hearing screening programmes requires an increase in the number of departmental vision/hearing testers. The establishment has been increased from 42 in 1980 to 53 in 1984.

Acquired Hearing Impairment in Adults Many cases are noise-induced, and this problem is dealt with in the next section.

Despite the lack of definitive data it is apparent that a high percentage of the elderly suffer hearing impairment. Improved surgical procedures, the high quality of hearing aids, and the availability of subsidies for hearing aids should have improved the lot of the hearing impaired adult. However, it is apparent that many people either do not seek aid or, when they do, the quality of such aid and rehabilitative measures may be less than optimal.

Measures to better define the problems and to rationalise and improve services are under urgent consideration by the Committee on Hearing.

Noise-induced Hearing Loss The extent of this problem in New Zealand is difficult to assess, but it is estimated that there are

40 000 adults with significant hearing impairment as a result of exposure to excessive noise levels. The department, over recent years, has increased its efforts to reduce the exposure of people to harmful noise levels and to encourage industries to run hearing conservation programmes. Indeed, as far as is known, when New Zealand introduced a comprehensive hearing conservation programme in industry in 1983, it was the first country to do so.

This programme includes:

- measuring noise levels in all premises where employees may be subject to excessive noise (above 85 decibels);
- assisting efforts to have noise at work reduced and, if this cannot be achieved, advising on the use of adequate hearing protection devices; and
- conducting educational programmes on hearing conservation in industries, supported by national publicity.

To assist the programme, an Occupational Deafness Co-ordinating Committee has been formed in each of the country's 18 health districts with representatives from government organisations, along with employer and employee groups. Special training courses have been held for district health staff, to provide advanced knowledge in noise measurement, noise control, and hearing conservation. Courses have also been held to train nurses and safety officers in the organisation and implementation of hearing conservation programmes.

To assist in the implementation of the programme, the department developed a hearing conservation kit containing printed and audio-visual materials. This is available on loan to organisations from district health offices.

Conclusion Much has been achieved in the co-ordination, rationalisation, and expansion of hearing services. The problems are better defined and some forms of deafness have decreased and are likely to decrease further with present programmes.

Much remains to be done and this will require further extension and rationalisation of services. The encouragement of public and professional awareness and involvement is essential for the success of programmes.

The department will continue to work towards this in association and consultation with the many other organisations and people involved.

CHAPTER 2

INTERNATIONAL HEALTH

Aid in the Pacific Region Under the New Zealand Bilateral Aid Programme funded by the Ministry of Foreign Affairs, 10 medical consultants carried out assignments in Pacific Island countries and 52 patients from Pacific Island countries came to New Zealand for medical treatment not available in their own country.

Since the funds available to countries in the Pacific under New Zealand bilateral and Pacific regional aid were merged in April 1982, these countries have had to advise how they want their allocation to be spent. The number of requests for medical treatment in New Zealand has continued to increase; the number of requests for visits by health personnel to train and/or teach has decreased. In previous years up to 27 patients could be treated in New Zealand under the programme—Tonga could send up to 4 patients, Fiji up to 15, Western Samoa up to 6, and Kiribati up to 2. In 1983–84, under the new arrangement, Tonga sent 19 patients, Fiji 19, Western Samoa 8, Tuvalu 4, Kiribati 1, and Solomon Islands 1, making a total of 52.

The department is advising the Ministry of Foreign Affairs on plans to review New Zealand's health aid to Fiji.

Training in New Zealand The number of requests for health training in New Zealand continues to increase. Over 70 WHO and Bilateral Aid Programme Fellows studied in New Zealand during the year.

The trend towards short observation tours in a range of health care areas rather than long-term medical or nursing training at 1 institution continued.

The Pacific Para Medical Training Centre at Wellington Hospital had 16 trainees undertaking courses in diarrhoeal diseases, acute respiratory infections, blood transfusion, histology, and cytology and haematology.

Three doctors from Bahrain have been accepted by the Auckland Hospital Board for postgraduate training. All costs associated with their training will be met by the Government of Bahrain. There have also been 4 trainees from Saudi Arabia doing postgraduate medical training in New Zealand at their Government's expense, and 8 Saudi Arabian Standards Organisation employees undertaking practical training aligned to the drafting of new food standards for the Gulf Co-operation Council.

New Zealand Health Delegations to Other Countries

Proposals for the training of Gulf States medical personnel as well as other areas of co-operation in the provision of health care have arisen out of a visit to some Gulf countries in May 1983 by the Minister of Health, the Hon. A. G. Malcolm, the Director-General of Health, Dr R. A. Barker, and Dr C. Maclaurin, Associate Dean of Postgraduate Affairs, University of Auckland Medical School.

Dr G. C. Salmond, Deputy Director-General of Health, accompanied the Hon. A. G. Malcolm to Ottawa in October for the Seventh Commonwealth Health Ministers Meeting.

Dr A. J. Sinclair, Director, Division of Hospitals, and Principal Medical Officer International Health, represented New Zealand at the South Pacific Commission Meeting of Heads of Health in December 1983.

World Health Organisation The Minister of Health, the Hon. A. G. Malcolm, led the New Zealand delegation to the World Health Assembly in Geneva in May 1983. Other members of the delegation were Dr R. A. Barker, Director-General of Health, and Miss E. A. Will, Assistant Director, Division of Nursing.

Dr B. W. Christmas, Deputy Director-General of Health (Public Health), represented New Zealand at the Western Pacific Regional Committee meeting of WHO in September 1983.

Four WHO fellowships offered to New Zealand were taken up in the fields of psychiatric nursing, nursing manpower planning, health services resource management, and the planning and implementation of health programmes.

Visitors from WHO during the year included Dr H. Nakajima, Regional Director for the Western Pacific; Dr L. R. Verstuyft, Representative and Programme Co-ordinator from the Suva office; Dr I. Geizer, Regional Adviser in Health Laboratory Technology; Dr Wong Hee Deong, Regional Adviser in Oral Health Services; 2 delegations of medical officials from the People's Republic of China, who studied primary health care and health services research and manpower planning; 2 state ministers of health from the Philippines, who studied primary health care; and Mr Paul Hodgson from the National Library of Australia in Canberra, who came as a WHO consultant to discuss the implementation of a Western Pacific Regional Committee meeting resolution on regional biomedical information systems development and support.

Other Visitors Other visitors and delegations to New Zealand for whom programmes were arranged included the Minister of Health for Tasmania, the Hon. T. J. Cleary, and the Permanent Head of the Department of Health for Australia, Mr L. J. Willett; the President of Seoul National University, Dr E. H. Kwon; Lieutenant

S. Steven, Medical Administration Officer, United States Navy; Mr C. Clinkscales, Executive Director, National Alliance of Senior Citizens; Dr Mildred Moorehead, Director, Evaluation Unit, and Professor of Community Medicine, Albert Einstein College of Medicine, New York; Dr D. A. Denny from the Department of Health and Welfare in Canada; and Dr Richardson K. Noback, Professor of Medicine, Head of Division of Geriatrics School of Medicine, Kansas. Two delegations visited from Japan, 1 from the National Federation of Health Insurance Societies and 1 from the Building Management Education Centre. There were also 2 delegations from the United States travelling under the auspices of People-to-People International, and a party from UNICEF in the People's Republic of China.

CHAPTER 3

HEALTH PROTECTION

ENVIRONMENTAL HEALTH

Water Supply and Sewage Disposal Since 1969, government subsidies at a rate of \$1 for \$2 have been available to assist territorial local authorities to provide new or improved main water supply systems, and sewage treatment and disposal. On 24 May 1982, the Government changed the subsidy rate to a sliding scale varying from 40 percent (for schemes serving communities of 1000 and under) to 10 percent (for communities of 100 000 and over). This was to redirect subsidy assistance to smaller communities, where needs are greater.

A \$1 for \$2 subsidy towards initial sewerage reticulation is being phased out, and no new applications have been accepted since 1 April 1982.

A subsidy of 50 percent of the cost of water supply fluoridation was introduced on 1 April 1981.

Details for all subsidies in 1983-84 are shown in the table.

SUBSIDIES SCHEME

| <i>Subsidy</i> | <i>Number of New Works Approved 1983-84</i> | <i>Value of New Subsidies Approved 1983-84</i> | <i>Expenditure 1983-84</i> | <i>Expenditure 1982-83</i> |
|-------------------------------------|---|--|----------------------------|----------------------------|
| | | <i>\$</i> | <i>\$</i> | <i>\$</i> |
| Sewage treatment and disposal | 15 | 1,763,872 | 6,893,871 | 12,144,161 |
| Initial sewerage reticulation | 12 | 1,713,239 | 3,813,605 | 3,853,651 |
| Water supplies | 11 | 990,764 | 6,602,356 | 6,412,751 |
| Fluoridation | - | - | - | 3,837 |
| Total | 38 | 4,467,875 | 17,309,832 | 22,414,400 |

NOTE: 19 additional subsidies, amounting to \$2,400,984, were approved towards completing work begun in previous years.

Refuse Disposal and Hazardous Waste Management The 1982 *Refuse Survey and Grading of Landfills* (Board of Health Report Series No. 32) was published in June 1983 and distributed widely to local authorities and other agencies concerned with waste management. The report contained a proposed framework for hazardous waste disposal based on co-disposal with domestic and other trade refuse at suitable sites. It also set out the steps for the management of hazardous wastes recommended to the Minister of Health in 1982 by the Local Authority Affairs Committee of the Board of Health.

Pilot surveys of hazardous wastes were carried out in 1983 by departmental staff in the health districts of Palmerston North, Rotorua, Dunedin, and Invercargill. From these surveys, and another in the New Plymouth Health District in 1982, approximately 4550 tonnes per year of waste which might be hazardous was identified. About 590 tonnes (13 percent) of this could be regarded as of moderate to high human toxicity.

At the instigation of the department, 2 sessions at the annual conference of the Institution of Professional Engineers of New Zealand in February 1984 were devoted to hazardous waste management.

Three regional seminars, hosted by Auckland, Palmerston North, and Christchurch, were organised in co-operation with the Commission for the Environment and the Ministry of Works and Development. Approximately 270 people attended these seminars to exchange views and develop regional strategies for the management and disposal of hazardous wastes.

Air Pollution Control The department's Air Pollution Control Section licenses and monitors emissions from about 350 large industrial processes listed in Part A of the Second Schedule of the Clean Air Act 1972 and the 1982 amendment to the schedules. The section also advises local authorities, which license 700 smaller industries operating processes listed in Part B of the Second Schedule.

In 1982, 7 local authorities in the Canterbury region (Eyre, Heathcote, and Paparua county councils, Kaiapoi, Rangiora, and Riccarton borough councils, and Waimairi District Council) recommended that clean air zones be created in their districts. The public hearing of these recommendations was held in April 1983, and 5 objections were considered.

Following consideration of the report on the hearing, the Minister of Health approved the making of an Order in Council to create new clean air zones covering these districts. The Clean Air Zones (Canterbury Region) Order 1984 has effect from 1 April 1984 and excludes the use of certain fuels and the installation of non-complying fuel-burning appliances within the zones.

An interest-free loan scheme introduced in 1982 to encourage householders in clean air zones to install approved space heating appliances was extended in October 1983 to include the replacement of domestic hot water systems. The maximum loan under the scheme is now \$1,500 and is available to householders in both the original Christchurch clean air zone and the newly created Canterbury Region clean air zones.

A proposal to continue the incineration of polychlorinated biphenyls (PCBs) in a cement kiln at Tarakohe attracted considerable local resistance, in spite of the proven success of the method in trials

and its endorsement by pollution control authorities and environmental interests worldwide. Further consideration is being given to means of disposal of PCBs.

Noise Control The Noise Control Act 1982, which came into force on 1 June 1983, has received a mixed response from territorial local authorities. While no thorough review of the working of the Act has yet been conducted, it appears that local authorities which have allocated adequate resources to enforcing the Act have applied it effectively. Others have elected to enforce the Act only during normal working hours, or in a few cases to ignore it.

In consequence, the level of noise control experienced in different communities is widely variable. While the Act recognises the subjective nature of noise and the fact that different communities will tolerate different noise levels, it appears that the principal determinants of noise control are the willingness of local authorities to commit the required resources and of staff to act in keeping with community expectations. A review of the operation of the Act will be carried out in 1984.

OCCUPATIONAL HEALTH AND TOXICOLOGY

During the year there was an increase in the number of requests made for technical information and for advice on, or investigation of, specific problems. These covered a wide range of subjects, including health problems associated with the use of dielectric heaters in the curing of glues, the acceptable charge in electric fences, heat stress, the use of lasers, and problems associated with the use of various chemicals. For each of these queries the available evidence must be reviewed and the possible health risks assessed. Appropriate advice can then be given on how potential health hazards may be removed or reduced.

Deafness at Work A major hazard at work is noise. Growing awareness of this problem has led to an increase in the yearly number of notifications of noise-induced hearing loss:

| | | | | | |
|---------------|------|------|------|------|------|
| Year | 1976 | 1978 | 1980 | 1982 | 1983 |
| Notifications | 9 | 143 | 174 | 347 | 679 |

A 2-year programme aimed at reducing noise-induced hearing loss has been initiated, in association with the Department of Labour and the ACC. This includes reducing noise at source, educating all concerned with the problem, and ensuring that the correct hearing protection equipment is made available where necessary. It may be some years before the full benefits of this programme become obvious, as noise-induced hearing loss can take many years to develop.

Agricultural Health Priority was given during the year to health problems of the agricultural community in which some 150 000 people work.

Following previous work done in the department, a 2-year programme to reduce the incidence of human leptospirosis was instituted, in association with the Ministry of Agriculture and Fisheries and the ACC. In 1979, 610 cases of leptospirosis were notified; the target for the programme is to reduce the number of notifications to 100 per year by 1985. It is hoped to achieve this through an extensive cattle vaccination campaign and through education.

Following a departmental report that 28 percent of those using organophosphates reported symptoms suggestive of poisoning, a 2-year programme was begun, aimed at reducing the number to less than 1 percent by 1985. The programme involves education and regular blood tests for those most at risk. Results obtained so far suggest that the programme has produced a marked improvement in operator handling of organophosphates.

A report published in 1982* showed that those handling sheep with contagious pustular dermatitis were most at risk of developing the skin disease orf. During the year 6 seminars were held in different parts of the country to discuss prevention of the disease.

Following discussion with those working in the timber industry, a pamphlet entitled *Safe Timber Treatment* was published.

Special Investigations As a result of a suggestion that those involved in road maintenance work might have an increased risk of cancer, a country-wide survey of road maintenance workers was carried out. No evidence was found to suggest an increased risk of cancer.

Investigations were completed into the use of solvents and problems in pottery manufacture. Recommendations made on how risks to health could be reduced are now being implemented.

Occupational Health Guidelines Work continued through the year on the production of occupational health guidelines. These are written in consultation with representatives of interested groups and provide, in simple language, practical guidance to ensure that the health of those at work is adequately safeguarded.

Draft guidelines on electroplating and formaldehyde were completed during the year and have been issued for 1 year for trial use and discussion prior to final revision and publication.

Work continues on guidelines relating to soldering in the electronics industry, and work in foundries.

**The epidemiology of orf: a survey of orf in man and contagious pustular dermatitis in sheep in New Zealand.* — Wellington: Occupational Health and Toxicology Branch, Division of Public Health, Department of Health, 1982.

Control of Toxic Substances On 1 August 1983 the Toxic Substances Act 1979 and the Toxic Substances Regulations 1983 came fully into force. This legislation replaces the provisions of the Poisons Act 1960 and the Poisons Regulations 1964 which dealt with chemical substances other than medicines. The new legislation provides for improved control of the use, labelling, availability, packaging, storage, transport, advertising, manufacture, and importation of toxic substances.

A comprehensive index of most of the chemicals and chemical products used in New Zealand is being prepared. Data already held by the department have been entered on to computer. The index, when complete, will be a valuable aid in the regulation of chemical substances in New Zealand.

Asbestos Measures to safeguard the health of those working with asbestos continued during the year. A series of seminars was held throughout the country at which the problems associated with the use of asbestos were discussed.

A revision of the Asbestos Regulations enacted in 1983 ensured better control of emergency work with crocidolite (blue asbestos) and ensured that the greatly increased health risk associated with smoking in the industry was made known.

The maximum allowable level of crocidolite for workers not wearing protective clothing was reduced from 0.2 fibres/ml of air to 0.1 fibres/ml of air. Following a recommendation from the Occupational Health Advisory Committee, notice was given that from 1 April 1984 the standard for amosite (brown asbestos) would be the same as for crocidolite.

Work with crocidolite can only take place with prior approval. As shown in the table, there was a considerable increase in such work this year:

| Year | | | | | Asbestos Removal | Asbestos Encapsulation | Emergency Approval | Total |
|------|----|----|----|----|---------------------|---------------------------|-----------------------|-------|
| 1979 | .. | .. | .. | .. | 12 | 3 | - | 15 |
| 1980 | .. | .. | .. | .. | 24 | 4 | - | 28 |
| 1981 | .. | .. | .. | .. | 25 | 4 | - | 29 |
| 1982 | .. | .. | .. | .. | 35 | 6 | 2 | 43 |
| 1983 | .. | .. | .. | .. | 84 | 11 | - | 95 |

Following a report that some asbestos cement pipes in reticulation systems contained crocidolite, tests were carried out to determine the relative health risks of different methods of working on these pipes. A meeting was then held with representatives of employers and employees at which practical measures to safeguard the health

of those doing such work were agreed. Subsequently 261 approvals were given for such work to be carried out subject to the agreed safeguards.

Toxic Substances Board The Toxic Substances Board met 5 times during the year. Its primary task was to finalise the draft Toxic Substances Regulations, which were then recommended to the Minister and subsequently enacted.

Other issues with which the board has been concerned during the year include: lead in the solder of tin cans, the disposal of PCBs and other toxic waste, emissions of chlorofluorocarbons to the atmosphere, chemical spillages, and solvent sniffing.

Occupational Health Advisory Committee This committee, which advises the Minister on matters relating to the health of those at work, met 4 times during the year. Recommendations were made, and appropriate action taken, on specific occupational health matters including the hazards to operating theatre staff of anaesthetic gases, deafness prevention, talc, asbestos, gravimetric standards for coal dust, and lung function testing.

FOOD

International Food Standards The Division of Public Health has continued to participate in the work of the FAO/WHO Codex Alimentarius Commission, which is responsible for developing international food standards. Officers have represented New Zealand at codex international meetings on food additives, food hygiene, and food labelling. They also continue to provide comment on draft codex standards to the New Zealand Codex Contact Point in the Ministry of Agriculture and Fisheries to assist in the preparation of New Zealand's formal written comments on all proposed codex standards.

Legislation Work is continuing on new draft Food Regulations which are intended to come into force in 1984. These will consolidate the food provisions of the Food and Drug Regulations 1973 and subsequent amendments.

Surveillance of Imported Food and Food Utensils Regular surveillance of an increased range and volume of imported food and food utensils is continuing. A computerised monitoring scheme to provide more efficient surveillance is being piloted in 1 port.

International Code of Marketing of Breastmilk Substitutes WHO and UNICEF have for many years conducted programmes to promote breastfeeding and to improve the nutrition of infants and young children. As part of these programmes, a joint meeting on

infant and young child feeding took place in Geneva in October 1979. Representing New Zealand at the meeting were Dr D. C. Geddis of the Plunket Society and Dr R. A. Barker, now the Director-General of Health. As a result of the meeting an international code of marketing of infant formula and other products used as breastmilk substitutes was prepared, and this was adopted by the World Health Assembly in May 1981*.

Following discussions with manufacturers, marketers, and other interested organisations, the Minister of Health announced in April 1983 that New Zealand had led the world in adopting the code in its entirety. At the same time he announced the establishment and membership of a committee to monitor the application of the code in New Zealand.

The monitoring committee held 5 meetings during the year. It considered the interpretation of various clauses, dealt with claimed breaches of the code, disseminated information on the adoption of the code to trade groups, and commenced a review of the labels of products covered by the code.

HEALTH INSPECTION

Health Quarantine The Health Amendment Act 1982 and the Health Quarantine Regulations 1983 came into force on 1 April 1983 and have been working satisfactorily. The new legislation reflects the change of emphasis in quarantine work from medical to environmental features, and gives inspectors of health authority to grant pratique. The number of ships being granted pratique by radio has been substantially increased and the new procedures for processing health declarations from aircraft by radio message have been satisfactory. These changes assist in ensuring the minimum delay to passengers and ships arriving in New Zealand.

In liaison with Ministry of Agriculture and Fisheries staff, departmental staff assisted with the training of airline cabin staff so that "blocks away" spraying (spraying of the aircraft before departure for New Zealand) could be extended. The advantage of this method of aircraft spraying is that passengers and aircraft are not subject to delay on arrival.

Relocatable Homes During the year the Camping Ground Regulations 1936 were revised to include provisions for relocatable (mobile) homes. The objective of the proposed change is to permit a different type of accommodation which would satisfy those who want an alternative lifestyle. The draft legislation seeks to do this

*World Health Organisation. — *International code of marketing breastmilk substitutes*. — Geneva: World Health Organisation, 1981.

while at the same time ensuring that the rights of neighbours and adjoining property owners are not affected and that there is no diminution of public health standards.

Health Inspector Training Several departmental officers have completed an advanced training course in noise to better prepare them for investigating noise in industry.

To assist health inspectors in investigating noise in the environment, a new 1-year part-time training course and examination leading to a Diploma in Noise Control has been established under the auspices of the Examination Board of the Royal Society of Health, New Zealand Branch.

CHAPTER 4

HEALTH PROMOTION**FAMILY HEALTH**

Infant and Child Health Measures to extend and improve programmes, policies, and services in this important field received a great deal of attention during the year.

The implementation of the recommendations in the Board of Health's 1982 report *Child Health and Child Health Services in New Zealand* by the various government and private agencies involved with child health has been encouraged and monitored. Overall progress on the implementation of the recommendations is being overseen by the Officials Committee on Family and Social Policy and reported as appropriate to the Cabinet Committee on Family and Social Affairs.

Of the 195 recommendations in the report, 151 involve the Department of Health. The department has identified infant mortality, deafness prevention, child health and developmental surveillance, health education for parenthood, and the integration of regional child health services as issues for special attention. Accordingly, child health has been designated a priority programme for 1984-85 and objectives for departmental action specified for each of these issues.

Overall, action is under way on the majority of the report's 195 recommendations—29 percent have been implemented and progress made on a further 32 percent. The remainder have either been accepted by the agencies involved but not yet implemented, or require some clarification.

The *Health and Development Record*, released on 1 June 1982, is issued to parents after the birth of each baby, before the mother leaves the maternity hospital or the care of a domiciliary midwife. There has been a high level of interest in the record book, as demonstrated by the many comments and suggestions received by the department during the year. A second edition has now been published incorporating revisions based on suggestions received.

Recording Child Health and Development, a companion volume to the record book, is being prepared for publication in 1984. This has been designed for health professionals, particularly those who use the record book in their work. *Recording Child Health and Development* provides the protocols and rationale for health and development checks and covers topics such as vision, hearing, growth, nutrition, behaviour, dental health, accident prevention, and first aid.

Health Education for Parenthood Dr J. McCann retired in September 1983 from her post as National Co-ordinator for Health Education for Parenthood. By the end of the year 26 health education for parenthood committees had been established. Each committee had its setting-up expenses reimbursed. This covered the purchase of audio-visual aids. By taking up the challenge of co-ordinating health education for parenthood in their regions the committees are actioning the recommendations in *Child Health and Child Health Services in New Zealand* which aim at providing every child with a favourable start in life.

Genetic Disease Screening The National Testing Centre in Auckland continued its programme for detecting serious genetic disorders in newborn infants. During the 1983 calendar year, 11 cases of hypothyroidism and 2 cases of phenylketonuria were identified.

The Plunket Society The department's close association with the society on matters relating to infant and child health continued.

Under the terms of the renewed contract in the South Auckland Health District between the Plunket Society and the Minister of Health, a regional co-ordinating committee has been set up. It comprises local representatives of the society and the department, together with a general practitioner, a public health nurse, and a plunket nurse as co-opted members. The committee is responsible for providing the National Co-ordinating Committee (Plunket Society/Department of Health) with a periodic assessment of progress made in meeting the service requirements of the contract.

Health Assessment for School Entrants The school entrant health assessment by public health nurses was reviewed this year, and improved procedures were introduced at the beginning of 1984. By concentrating on certain key aspects of the examination it is planned to increase the proportion of school entrants covered in all districts and bring the national average from 84.6 percent to 100 percent.

Child Abuse In co-operation with the National Advisory Committee on the Prevention of Child Abuse, the department is preparing a booklet entitled *A Child You Know May Need Your Help*. This will assist nurses, teachers, social workers, and others involved in child care to identify and respond to suspected child abuse.

Hearing Deafness prevention has remained a priority programme. Much that has been done is covered in chapter 1.

The division's audiology group continues to play an essential part in providing a central advisory and information service on matters concerning hearing and deafness, assisting in the design of new

audiology clinics in hospitals, running training courses for departmental and other staff, and providing advice on hearing conservation policy and education in the occupational sphere.

Children's Health Camps The department's involvement in children's health camps continued, with the funding of the operational deficit of the camps and the Children's Health Camps Board, and the provision of secretarial services for the board. Departmental medical officers and public health nurses were involved in the selection, referral, and follow-up of children admitted to health camps. During 1983 more than 2500 children aged 5-12 years attended the camps.

In April, the new 60-bed Princess of Wales Health Camp in Rotorua was officially opened by the Prime Minister. This camp is now in full operation and already has a waiting list of children, in particular boys, who have been selected for admission.

In November the Minister established a committee of 3 to review the health camp movement. This committee is working closely with the Children's Health Camps Board, and is seeking submissions from a wide range of interested organisations and individuals to determine how the resources of the health camps movement should best be used, having regard to the current and future priorities for child health and child health services in New Zealand.

Nutrition Nutrition education programmes for health professionals have dealt mainly with infant and child feeding, following changes in recommendations for the nutrition of these age groups. Publications include papers on developments in the New Zealand diet over the past 20 years* and a review of the need for iodised salt†. Visits have been made to a number of institutions, including school hostels, child care centres, and old people's homes, to advise on food service.

Refugees During 1983 a total of 623 refugees from South-east Asia were received at the Mangere reception centre. Of these, 68 percent were from Kampuchea, 24 percent from Vietnam, and 8 percent from Laos.

The most common medical conditions found on routine examination were dysentery and infection with intestinal parasites. A total of 8.7 percent were found to be carriers of hepatitis B,

*"Our changing food habits: how much have things changed in the last 20 years?", in *Health*.—v. 35 no. 2 (Winter 1983) p. 11-12.

†"Our changing food habits. Part 2: the great New Zealand dinner", in *Health*.—v. 35 no. 4 (Summer 1983) p. 10-11.

†Davidson, Flora.—"Iodised salt: is it still necessary? [editorial]", in *J. NZ Diet Assoc.*—v. 37 no. 1 (Apr. 1983) p. 2-4.

reflecting the higher carrier rate in people from these regions. Thirty cases of tuberculosis were found, of which 14 were pulmonary and 16 occult (diagnosed by a skin test but without signs or symptoms).

Maori Health Because of the concern about the disparity in health status between Maoris and other New Zealanders, the department has identified Maori Health (Oranga Maori) as 1 of its 4 priority programmes for 1984-85. The aim of the programme is to work more effectively with Maori people in ways which are acceptable to them to bring about health improvement. As a first step, increasing recognition is being given to different cultural perceptions of health and sickness, the use of health services, and the importance of preventive health care. Emphasis is also being placed on improving cross-cultural dialogue and understanding between Maori people and health care workers. A number of cultural awareness programmes and seminars were undertaken during the year.

The department has maintained its support for local Maori community projects and Department of Maori Affairs programmes. Public health nurses continue to spearhead the department's involvement at district level by their participation in the growing number of Whanau (Te Kohanga Reo) and Kokiri Centres.

Marae-based health schemes which take account of traditional Maori views about health and illness and incorporate Maori healing practices with western-style health care are beginning to emerge. At the Waahi Marae a programme has been developed, in association with the Hamilton District Health Office, to train community health workers (Nga Ringa Aroha).

In March 1984 the department sponsored a workshop on Maori health "Hui Whakaoranga" at Hoani Waititi Marae in West Auckland. Over 300 people widely representative of Maori and pakeha interests and organisations attended the 3-day workshop. Discussion was structured around the 4 recognised dimensions of Maori health: Te Taha Wairua (spiritual wellbeing), Te Taha Hinengaro (mental wellbeing), Te Taha Whanau (family wellbeing), and Te Taha Tinana (physical wellbeing).

Emphasis was placed on the holistic view of health and on the positive contribution that Maori knowledge, attitudes, and practices can make to improvement in health. It is expected that the workshop report and its recommendations will identify many areas where the health services can act, in association with Maori people, to better protect and promote health and to improve the effectiveness of health services.

All divisions within the department have some involvement in Maori health. To integrate and better co-ordinate activities across the department, an inter-divisional committee on Maori health has been established.

DISEASE PREVENTION

Non-communicable Disease The Division of Health Promotion has continued its attempts to influence the nation's lifestyle habits, particularly in the hazard areas of cigarette smoking, alcohol consumption, and glue sniffing.

A pilot smoking cessation programme—SOS “Stop Ourselves Smoking”—is being conducted in Christchurch in conjunction with the National Heart Foundation, the Cancer Society, and other interested groups. The project involves publicity promotion in conjunction with the establishment of community-based smoking cessation groups led by trained leaders. Thirteen groups were established throughout Christchurch, each consisting of 10–13 people who met for 8 consecutive weeks up until mid-December 1983. Evaluation will be undertaken after 3, 9, 12, and 15 months.

The division participated in an inter-divisional committee on alcohol-related issues (see p. 47), and continued to liaise with outside agencies, including the Alcoholic Liquor Advisory Council and the Ministry of Transport.

The division is also working with other agencies to combat glue sniffing, which mainly involves children and adolescents. Health education materials for teachers, parents, and community workers are being prepared.

Communicable Disease

Tuberculosis: A slow but definite downward trend in the number of cases of pulmonary tuberculosis continued: 244 cases were notified in 1983 compared with 280 the previous year. However, even this number of cases is a salutary reminder that tuberculosis is still a disease of importance.

Maoris and Pacific Islanders continue to show higher rates of pulmonary tuberculosis than others. In 1983, these rates were 4 and 7 times higher respectively, compared with 4 and 9 times for 1982.

Four mass miniature radiography units remain in service in the North Island. During 1983, 104 322 people considered to be “at risk” of pulmonary tuberculosis were X-rayed and 25 cases found. This averaged 1 case for every 4173 X-rays taken.

AIDS (Acquired Immune Deficiency Syndrome): The number of cases in overseas countries such as the United States increased dramatically over the year. It became clear that New Zealand, with its highly mobile young population, was likely to acquire the disease. AIDS was made a notifiable disease and guidelines were issued to medical practitioners on its control. To the end of 1983 no cases were notified, but in January 1984 a New Zealander who had contracted the disease overseas was transferred to a New Zealand hospital from Australia.

Hepatitis: The overall number of cases of hepatitis has been falling over the past 4 years. In 1979, 2017 cases were notified; by 1983 this had dropped to 1265. However, as many cases of hepatitis are subclinical, the real level of infection in the community will be higher than this.

Although overall cases have declined, there has been a steady increase in cases of hepatitis B. This reflects at least in part the more accurate diagnosis of the disease, which in the absence of laboratory confirmation might have been classed as hepatitis A.

A fresh era is beginning in the control of hepatitis B with the introduction of a vaccine. The department is looking at the most cost-effective use of this limited resource. Emphasis on established methods of preventing the spread of the virus must continue.

Campylobacter: Although gastro-enteritis due to this micro-organism has only been notifiable for 4 years, it is now the most commonly notified disease. This reflects a growing awareness of the organism as a cause of gastro-enteritis. Guidelines for the control of campylobacter infection, based on studies in this country and overseas, are in preparation.

Legionellosis: This newly recognised disease only became notifiable in 1980. Since then notifications have steadily risen, with 25 cases reported in 1983 but with no known common source. It is likely that the number of cases will continue to increase as more infections are correctly diagnosed. Even with small numbers a winter seasonal rise is noticeable.

Meningococcal Infection: In 1983, 38 cases were reported, with a small outbreak in the Auckland region. The sporadic incidence reflects the carrier rate in the population.

Whooping Cough (Pertussis): The increase in cases reported in the last annual report continued into the early part of 1983. A review of immunisation policy carried out by the Epidemiology Advisory Committee is now being studied by the department.

Rubella: The number of cases of congenital rubella has decreased from 25 in 1981 to 1 in 1982 and 2 in 1983. In part this is to be expected because of the natural cycle of the disease. However, the now routine monitoring of pregnant women indicates an increasing level of rubella protection.

The immunisation programme for 11-year-old girls continues to be highly successful. Protection at the 98 percent level was achieved for the third successive year in 1983.

Malaria: Malaria continues to occur among people returning from malarious areas; 43 cases were reported in 1983. The increasing drug resistance of the malarial parasite in various parts of the world

prompted the department to modify its recommendations to travellers for malaria prophylaxis. Chloroquine and maloprim are now both recommended as the drug regime of choice.

Sexually Transmitted Diseases: Clinic returns continue to show an increase in viral infections (herpes and warts) but the number of identified cases of gonorrhoea, syphilis, and non-specific urethritis declined slightly.

Of concern is the young age at which sexually transmitted diseases are occurring and the occurrence of infertility in women usually as a result of infection, often asymptomatic.

The department continues to stress the danger of promiscuity and the importance of the tracing of contacts.

General practitioner training courses were held in Tokoroa and Hamilton and were well attended. The annual venereology conference sponsored by the department was again a valuable opportunity for those involved in control of sexually transmitted diseases to exchange ideas and information.

Immunisation: The percentage of new entrants fully protected after the school catch-up programme run by the department remained at 95 percent, the same as for 1982. This was despite the fact that slightly fewer children had been fully immunised by their family doctor at school entry than in 1982.

HEALTH EDUCATION AND INFORMATION

The health education activities of medical officers, public health nurses, school dental nurses, and health inspectors are facilitated by the work of the Health Education and Information Unit. Staff of the unit undertake the planning of the health education components of the priority programmes of the Bureau of Public Health and Environmental Protection. They are responsible for publicity associated with the programmes, and for producing a variety of educational and information materials. Publicity is arranged through an advertising agency and uses a mix of TV, radio, and magazine advertising appropriate to the target groups.

Asbestos The unit developed a display on asbestos and asbestosis with the assistance of the National Health Institute and the Occupational Health and Toxicology Branch. The display was presented in conjunction with educational seminars on asbestos held in Wellington (for Post Office staff) and in Whangarei and Dunedin (for staff of the Departments of Labour and Health).

Deafness Prevention at Work During the year, health education programmes were implemented with the objectives of both increasing workers' awareness and knowledge about the effects of

noise and hearing, and changing or reinforcing workers' attitudes and behaviour with regard to wearing hearing protectors. The programmes were implemented by district hearing conservation programme co-ordinators, using a hearing conservation kit.

The programme and the kit were well received, as indicated by the number of requests for programmes received from private companies. The majority of programme co-ordinators (87 percent) indicated that the aims of the kit were met. Several constructive suggestions for improvement were made and will be implemented for future kits. Publicity was provided through TV, radio, displays, and magazine advertisements. The effectiveness of the project is being evaluated.

Agricultural Health Organophosphate sprays present a health hazard to horticulturalists. A survey of the knowledge and attitudes of organophosphate users in 3 health districts was conducted and, from the findings, a strategy for educating users on safe handling of organophosphates was developed. The project involved liaison and co-ordination between the Department of Health district offices, Ministry of Agriculture and Fisheries, ACC, and people in the horticultural industry. Newspaper feature articles, radio interviews in farming programmes, shows, and field days provided publicity. The programme is ongoing in 1984.

Health Magazine The department's quarterly magazine *Health* continues to be a popular method of disseminating information on current health topics to the general public. *Health* contains articles on a wide range of topics; this year mental health and occupational health featured several times. Computerisation of the mailing list has resulted in greater efficiency in keeping the list up to date. *Health* is available from most chemist shops and is mailed to over 35 000 organisations and households who have requested it.

Audio-visual Library The audio-visual library now has 660 titles, mainly 16 mm film, including 49 new titles added during the year. With multiple copies of the films and other materials for which demand is greatest, the library now contains around 2500 items. There is a special section containing titles funded by the Hospital Boards' Association for the use of hospital boards. Users of the library, in addition to the department and boards, included technical institutes, polytechnics, and health-oriented organisations such as St John Ambulance, New Zealand Red Cross, and the Salvation Army.

Developments In the latter half of the year, 3 regional health education adviser positions, based in Auckland, Wellington, and Dunedin, were established. The role of these advisers is the planning of regional programmes. The principal task of the adviser in the northern region is the development of health education for the Maori community.

CHAPTER 5

DENTAL HEALTH

In 1978, at a dental health workshop, the following objective for the oral health of New Zealanders was adopted:

“The achievement of a standard of oral health which leads to a functional natural dentition for life.”

The importance of this objective is best illustrated by the fact that at the time a third of all adults had no natural teeth.

The substantial improvements in oral health over the last 5 years provide a cause for optimism that the long-term objective can be achieved.

A recent study in Auckland and Canterbury demonstrated that the number of people in the 35–44 age group who had no natural teeth almost halved during 1976–82. Of even more importance is the drop over the same period in the number of 25–29-year-olds with no natural teeth—from 9 percent to 2 percent. In the past this was the age group where the loss of teeth commonly occurred.

Perhaps the greatest cause for optimism, however, is the improvement in the oral health of children. In 1983, 15.6 percent of children leaving the School Dental Service programme at the end of their form II year had never had any dental decay in their permanent teeth. In a study of form II children in 1977, only 2.4 percent were “caries free”.

Two factors in particular are believed to have contributed to the reduction in dental decay: the School Dental Service and the use of fluorides. Previous reports have referred to the increased emphasis given in the School Dental Service to the prevention of dental disease. Through dental health education and chairside preventive measures, priority is given to oral health promotion.

The benefits of water fluoridation have been well established and documented. More recently, fluorides have become generally available throughout the community in a variety of forms. These include the widespread use of fluoride toothpaste, the use of fluoride tablets and routine applications of fluoride solutions by school dental nurses in areas without water fluoridation, and the general distribution of food and beverages manufactured with fluoridated water. As a result, virtually all New Zealand children are now obtaining some benefits from the use of fluorides.

Because of the more widespread use of fluorides, the department has reviewed its recommendations, in consultation with relevant outside authorities. The fluoridation of public water supplies was endorsed as the single most effective means of reducing dental decay on a community basis. New recommendations included reductions

in dosages of fluoride tablets for young children and advice that only a limited amount of fluoride toothpaste should be used for young children.

The Special Advisory Committee on Dentist Manpower met during the year and recommended no change to the earlier decision for intakes of 52 students in 1984 and 50 in 1985.

Dental Benefits Expenditure on dental benefits showed little change from the previous year. In a 1983 sample of claims, 60 percent of the teenagers required no treatment, compared with 55 percent in 1982. Teenagers attending dentists in areas with fluoridated water received 27 percent fewer fillings than those treated in non-fluoridated areas (40 percent in 1982).

During the year, new procedures were introduced to simplify administration and encourage enrolment by children entering secondary school.

A total of 770 dental practitioners hold contracts to provide dental benefits.

School Dental Service In 1983, the number of pre-school children enrolled in the School Dental Service increased by 5256. Although the total (93 209) includes infants participating in an enrolment-from-birth study, this increase reflects the efforts of school dental nursing staff and increasing awareness of the importance of dental health among parents of young children.

Enrolment of pre-school children is actively encouraged from 2½ years of age. A recent study of a national sample of 5-year-old children indicated that 47 percent of children had been enrolled by the age of 3 and 87 percent by age 5.

Dental Nurse Training Twenty-six student dental nurses, including 2 from the Dominican Republic sponsored under the Bilateral Aid Programme, graduated in February 1984. Seven senior dental nurses, including 2 from Malaysia, completed the advanced course in 1983.

In 1984, 25 New Zealand students and 3 from the Solomon Islands entered the first year of basic training and 31, including 1 from Niue, commenced the second and final year.

During the year 15 inservice courses were conducted for a total of 150 school dental nurses. Thirty-two former employees attended refresher courses on re-appointment to the School Dental Service.

CHAPTER 6

PRIMARY MEDICAL SERVICES**MEDICAL SERVICES**

Family Medicine Training Programme A restructured family medicine training programme has been approved by the Government. The period of hospital attachment has been reduced from 6 to 4 months and the time spent with a vocational trainer increased from 6 to 8 months. These and other changes will commence in December 1984. A proposal for the Royal New Zealand College of General Practitioners to take over the administration of this programme from the New Zealand Council for Postgraduate Medical Education from the same date is being examined.

Administration of Health Benefits To improve efficiency and to deploy staff more effectively, a revised administrative structure for the payment of health benefits is being introduced. With the exception of laboratory services, which are centred on Wellington, payment of all health benefits for South Island claimants is now centred on Christchurch. Similar measures for the North Island will be considered after these moves have been evaluated.

Primary Medical Services Review The Minister of Health established 2 bodies to consider aspects of the recommendations of the Primary Medical Services Review Report. The Liaison Group, which comprised representatives of the New Zealand Medical Association and the Department of Health, reached agreement on a number of issues during the year, including:

- details of the "Triple S Scheme". This is an alternative method to the fee-for-service/general medical services benefit method of remunerating general practitioners;
- a code of practice for general practitioners;
- revised functions and membership of District Practice Advisory Groups;
- a new approach to incentives payable to rural practitioners.

The Working Party, under the chairmanship of Mrs Vivienne Boyd, considered ways of improving primary medical services at the interface between the hospital and the community. A report was presented to the Minister of Health on 14 July 1983.

General Medical Services Benefit Submissions calling for an increase in the general medical services benefit continued to be received. The issue has been subject to continuing assessment by the Government throughout the year.

Sessional Scheme for General Practitioners In order to assess the effectiveness of the pilot sessional scheme, general practitioners taking part were asked to complete a written questionnaire. Although respondents had suggestions for improving various aspects of the scheme, overall they were very enthusiastic about the underlying concept, and appreciated the opportunity to broaden the scope of their work. The wide range of health education, counselling, and preventive medicine programmes established under the scheme have continued to attract patients and have produced some worthwhile results.

Practice Nurse Subsidy Scheme The terms and conditions of the practice nurse subsidy scheme were summarised during the year in *Clinical Services Letter No. 221*. Guidelines were also issued to district health offices. Increasing evidence of the use of practice nurses for non-professional duties has led to greater emphasis on the requirement that a receptionist be employed before a full subsidy will be paid.

A further review is currently taking place into employment of receptionists in group practices, to ensure there is no disparity in the conditions of the practice nurse subsidy between solo and group practices.

As at 30 September 1983 there were 1103 doctors employing 1304 practice nurses (858 full-time equivalents) under the scheme.

Incentive Loan Scheme The Minister of Health may approve up to a maximum of 4 incentive loans each year to assist medical practitioners to set up in general practice in areas of identified need.

Since the inception of the scheme in 1982, loans have been approved for Bluff, Edgecumbe, Portobello, Russell, Raglan, Pleasant Point, Hikurangi, and Eketahuna. Under the scheme, half of the loan is repayable after 4 years in practice and the other half is written off over 4 years after 5 years in practice. To date 1 loan has been repaid in full, because the general practitioner concerned ceased to practise in the location within 1 year.

Medical Laboratories An amendment to the Social Security (Laboratory Diagnostic Services) Regulations 1981 and changes in practice envisaged in last year's report have now been implemented. Following recent trends, administration of the laboratory benefit is now based in Wellington.

Breast Prosthesis Subsidy On 23 July 1983 the Minister of Health opened the National Seminar of the Mastectomee Rehabilitation Service and announced an increase in the subsidy on the cost of an initial breast prosthesis. For women having a mastectomy on or after 1 August 1983, the subsidy for an initial

prosthesis was increased from \$40 to \$80. This change has enabled many women to afford a prosthesis of more satisfactory quality. The subsidy on replacements, which may be accumulated if the woman wishes, remained at \$40.

Social Security (X-ray Diagnostic Services) Regulations In recognition of recent advances in technology, it is proposed to recommend a change to the title and provisions of the Social Security (X-ray Diagnostic Services) Regulations 1979 to allow for the use of ultrasound as an alternative method of investigation in certain situations.

The advent of CT scanning in the private sector has led to representations being made for similar inclusion in the Regulations. This is currently being assessed.

Maternity Services Because of the freeze, no discussions over the fees paid for maternity services were held. Advantage was taken of this pause in negotiations to set up a working party composed of representatives of the New Zealand Medical Association and the Department of Health to examine the guidelines for interpretation of maternity benefits. Changes recommended will be implemented at a suitable time.

Accident Compensation Corporation In line with legislative requirements, the corporation advised the Department of Health and the Treasury of impending changes in the remuneration of doctors providing accident care.

Concern was expressed by the department at the differing levels of remuneration which had been developing for accident care compared with sickness care. The effect of fees being paid for accident care on total health expenditure had also been a source of concern.

Discussion between the 2 departments and the ACC is continuing.

MEDICINES

Pharmaceutical Benefits The average cost per prescription for this year increased by 5.8 percent to \$7.31. Despite the price freeze, there were a large number of price increases for imported medicines. The professional fee paid to retail pharmacies for dispensing social security medicines was not increased this year because of the wage and price freeze.

Period of Supply for Prescriptions On the completion of the trial in the Dunedin Health District, further consideration was given to adopting the Wairarapa Pilot Study on a national basis, with the proviso that the prescribing of a 3-month supply instead of 3 single

supplies would not be actively encouraged. The Wairarapa Pilot Study had indicated the potential for considerable savings in public expenditure.

It was planned to make the necessary alterations to the Drug Tariff and introduce the changes on 1 December 1983. This was then delayed to 1 April 1984. Following strong representations from pharmacy groups, however, the Minister decided instead to set up a working party to consider:

- an alternative system for getting away from the unrealistic monthly requirements for prescribing and the abolition of the extended supply endorsement, except for antibiotics;
- ways of making savings equivalent to the potential of the Wairarapa Pilot Study in pharmaceutical benefits expenditure in that portion of expenditure which relates to retail pharmacy.

Special Purpose Foods for Milk Intolerance The new arrangements for the supply of special purpose foods for milk intolerance have operated smoothly during the year. There has, however, been some reluctance to accept the new arrangements where supplementary pharmaceutical benefits are approved only on medical grounds rather than on social grounds.

Total approvals from 1 December 1982, when the new arrangements came into force, until 30 November 1983 amounted to 1438.

Practitioners' Supply Orders During the year negotiations took place with the Chemists' Guild over the method of reimbursing retail pharmacies for items obtained on practitioners' supply order forms.

As a result, from 1 April 1984 payment for practitioners' supply orders will be comparable with that for prescriptions, in that pharmacists will receive a professional fee and container allowance when re-packing or compounding medicines.

This change has been introduced to recompense more fairly pharmacists required to extemporaneously compound in comparison with those simply handing out bulk quantities of pre-packed items.

Import Licences Discussions have been held with other involved government departments to determine whether or not provision can be made for the importation of an alternative brand of a locally manufactured medicine if the importer can guarantee considerable savings in expenditure on pharmaceutical benefits.

Prescription Pricing Offices The 5 pricing offices have worked smoothly. There has been 1 minor re-distribution of work between 2 offices in order to more closely balance work intake with processing capacity.

New and Changed Medicines During the year, 141 new medicine applications were received. Of these, 34 were referred to either the Drug Assessment or the Epidemiology Advisory Committee; 9 (plus 110 from previous years) were accepted; 3 (plus 6 from previous years) were withdrawn or declined; and the remainder are still under consideration. During the year, 511 changed medicine notifications were received; 402 of these were accepted, 10 were declined, and the remainder are still under action.

Four-day Antibiotic Period of Supply On 1 August 1982 the period of supply for prescriptions for oral antibiotics was reduced from 5 days to 4 days, plus a repeat of 4 days where required. Prescriptions for longer periods are required to be suitably endorsed.

Antibiotic Granules The basis for payment from public funds for dispensing antibiotic granules for re-constitution to oral liquids was altered on 1 April 1983. Payment is now made for the exact quantity prescribed. Assessment of the savings in this area is under way.

Drug Abuse Drug abuse is a continuing problem. About 100 new patients register at the major drug treatment centres each month, and this is only a small proportion of the total users.

Drugs abused include illicit ones such as cannabis and heroin, as well as those legally available. The latter may be obtained on prescription, stolen, or purchased from pharmacies and sometimes modified into more potent and toxic forms.

An assistant director has been appointed to the Clinical Services Division to liaise with drug treatment centres and district health office staff in the development of treatment programmes and the monitoring of abuse.

Some doctors who are prescribing unwisely are under surveillance. Disciplinary procedures have been instituted in some cases.

Drugs Advisory Committee In July the Drugs Advisory Committee held its annual meeting with heads of drug treatment centres. Subjects discussed included the abuse of buprenorphine, the collection of data from centres, drug abuse policy, and therapeutic communities. Delegates again expressed their appreciation of these meetings.

The committee has now produced 4 reports on various aspects of drug abuse. Consideration is being given to reconstituting the committee as an advisory committee within the normal departmental structure.

Buprenorphine (Temgesic) First introduced in 1979, as a treatment for moderate to severe pain, buprenorphine was reported in 1982 as being sought by drug abusers. Evidence of drug seeking, indiscriminate prescribing, and intravenous use of buprenorphine by attenders at drug clinics continued to increase.

Drug treatment clinics and district health offices advised that the abuse of buprenorphine was constituting a public health problem and that there was evidence of the drug causing dependency. Therefore, buprenorphine was this year included in the schedules of the Misuse of Drugs Act 1975, requiring the same degree of control as the barbiturates. As a result more accurate monitoring is now possible and this has revealed a decrease in the level of abuse.

Prescribing Workshop A workshop on prescribing and the use of pharmaceuticals in general practice, funded by the Health Services Research Committee of the Medical Research Council, was held in Christchurch in August. Hosted by the Department of Community Health of the Christchurch Clinical School, the workshop aimed to review current available information about prescribing and identify areas for possible research. A full report is being provided to the Medical Research Council.

The workshop recognised the importance of gathering information about all aspects of prescribing, and the necessity for continually reviewing that information at community, pharmacy, general practitioner, regional, and national levels. It was seen as important that, in such research, prescribing should be viewed in relation to the full range of activities in which practitioners and their patients may be involved, rather than as an isolated activity. Efforts should be made to see that general practitioners take an active rather than a passive part in such research.

Medicine Information Centres Medicine Information Centres have been established in the pharmacies of Auckland, Wellington, and Dunedin hospitals with the approval and funding of the respective hospital boards. These centres are staffed by hospital pharmacists working in close conjunction with pharmacologists and clinical pharmacologists attached to the adjacent clinical schools of medicine. Reference material may also include the IOWA Drug Information System and MEDLINE. At present, services are generally limited to inquiries from within hospitals, but it is hoped that they will eventually be extended to cover outside inquiries from other health professionals.

Monitoring Adverse Medicine Reactions Following discussions with pharmaceutical companies relating to local and overseas reports of adverse medicine reactions, the following actions have resulted:

- Withdrawal from the market of several medicines, including chloramphenicol-propyleneglycol eardrops (because of potential ototoxicity); Indosmos, a controlled release formulation of indomethacin (because of potential gastro-intestinal bleeding and perforation); and zimelidine, a bicyclic antidepressant (because of potential hypersensitivity syndrome).
- Updating the prescribing information of several medicines, including moxalactam (potential bleeding); verapamil (potential hepatotoxicity); probucol (potential cardiotoxicity); erythromycin (potential ototoxicity); and sotalol (potential cardiotoxicity).
- Deletion of ingredients of several medicines, including tartrazine from tinidazole tablets and sodium bisulphite from fenoterol solution for inhalation (because of potential hypersensitivity problems).

Committee on Adverse Drug Reactions The committee has been mainly involved with the following activities:

Voluntary reporting of reactions to any medicine: This system is primarily intended to identify adverse reactions associated with medicines and has been operating since 1965 with gratifying results.

Intensified Adverse Drug Reaction Reporting Scheme: This was one of the first national post-marketing monitoring schemes of its kind in the world and has been operating since 1977 with remarkable success. It is primarily intended to monitor a limited number of newly marketed medicines with novel or unusual characteristics for a limited period of time in order to detect any unusual event, particularly previously unsuspected serious reactions. Last year the following medicines were monitored: aciclovir (Zovirax), amiodarone (Cordarone-X), captopril (Capoten), mianserin (Tolvon), nifedipine (Adalat), and tocainide (Tonocard).

Medical Alert/Warning System: This scheme is operated in conjunction with the hospital admission/discharge system and identifies, on admission, any patient who is predisposed to a serious reaction to a medicine. 'Alerts' refer to potentially life threatening adverse reactions and 'warnings' to all other kinds of reactions.

It is proposed to unify all 3 reporting schemes by the use of a single form for reporting reactions direct to the Medical Assessor in Dunedin.

Inspection of Medicine Manufacturers Inspections against the *Code of Good Practice for Manufacture and Distribution of Medicines* (1978) were carried out on over 50 medicine manufacturers. Each manufacturer visited received a written report detailing areas in which improvement was considered necessary. A few were advised that upgrading would be required before a manufacturing licence would be granted, when the appropriate provisions of the Medicines Act 1981 are implemented.

Mediqual and Medicine Recalls Routine testing of 2 major therapeutic groups—eye ointments and nasal drops and decongestants—was completed this year. As well, a selection of Chinese remedies were surveyed for the presence of corticosteroids, although none were found. Sterility testing of medicines such as parenteral solutions has been deferred, pending the availability of adequate laboratory facilities at the National Health Institute. Over 70 investigations of complaints about medicines resulted in the recall of 15 batches of products, of which 8 were at retail pharmacy level.

Cosmetics Good manufacturing practice inspections were carried out on over 45 companies which manufacture cosmetics and related products. These inspections were based on the *Code of Good Practice for Manufacture and Packaging of Cosmetics* (1982) and the *Code of Good Practice for Manufacture and Distribution of Medicines* (1978) as it applies to related products.

Reports were written to these firms detailing areas of concern and stressing the need in particular for good documentation and quality control when appropriate.

A number of inquiries and complaints regarding these products were discussed with the industry. Preliminary microbiological testing of a number of products indicated no significant problem.

Medical Devices Problems with 19 medical devices were investigated, leading to 11 recalls. These recalls were generally related to a particular problem batch. Most of the recalls were from warehouses or hospitals, but 1 was at the consumer level.

Following concern over possible microbiological contamination of first aid dressings which were supplied to retail outlets and used by individual consumers, a number of meetings with the industry were held. As a result, these products are now being sterilised on receipt into New Zealand or on the completion of manufacture if made in New Zealand.

Specific products which were exempted from sterilisation included triangular bandages, adhesive tape, and crepe bandages. Exemption is also allowed where the manufacturer can provide evidence that sterilisation is unnecessary.

Products which are labelled as sterile are expected to maintain their sterility.

District Advisory Pharmacists From 1 August 1983, the 11 officers previously designated as public health pharmacists were re-designated district advisory pharmacists, to more aptly describe their functions. This does not change their statutory powers when acting under warrants, provided for by various Acts and Regulations, as officers/inspectors.

Areas of increasing involvement such as drug abuse or misuse, the sale of prescription drugs by unauthorised persons (agents of veterinary surgeons) to owners of animals, and the sale of unregistered medicines by operators of health food shops and similar outlets, have led to modifications in the time spent on inspections of pharmacies, hospital dispensaries, and pharmaceutical wholesalers. New inspection forms have been designed to expedite this work.

CHAPTER 7

HOSPITAL SERVICES**HOSPITAL BOARD FUNDING**

Grants to Hospital Boards 1983-84 The total allocation for grants to hospital boards in 1983-84 remained the same in real terms as in 1982-83.

The population-based system of determining financial allocations to hospital boards was implemented from 1 April 1983. The 3 major policies resulting from this were:

- boards shown to be financially advantaged have their actual allocation reduced to move it closer to their calculated equitable entitlements;
- boards whose actual allocation falls within their tolerance zone (see p. 36 of last year's report) are regarded as being at equity and no adjustment is made to their actual allocation;
- boards shown to be financially disadvantaged, and which provide acceptable service development plans, may have service development grants added to their funding which move their actual allocation closer to their calculated equitable entitlement.

Thus a process is established to shift funds from financially advantaged to financially disadvantaged boards. To assist this process 2 types of restraint were applied to hospital board allocations. For 1983-84, 9 boards shown to be financially advantaged had their allocations reduced by between 0.2 percent and 4.5 percent. A further flat reduction of 0.5 percent was applied to the allocations of all boards except the 8 most disadvantaged, to enable existing commissioning grants to be added to the base allocations of 7 boards without increasing the total allocation in real terms.

Full provision was made for price and wage movements.

Grants made to hospital boards in 1983-84 represented 69.5 percent of Vote: Health. Details are shown in the table.

GRANTS TO HOSPITAL BOARDS 1983-84

| | | | | | Allocated \$(000) | Spent \$(000) |
|----------------------------|----|----|----|----|----------------------|------------------|
| Grants allocated directly: | | | | | | |
| Operating grant— | | | | | | |
| Salaries and wages | .. | .. | .. | .. | 928,281 | 911,797 |
| Other operating | .. | .. | .. | .. | 252,297 | 252,395 |
| Sub-total | .. | .. | .. | .. | <u>1,180,578</u> | <u>1,164,192</u> |

| | | | | Allocated \$(000) | Spent \$(000) |
|---|----|----|----|----------------------|------------------|
| Supplementary grants: | | | | | |
| Reserve for salary and wage increases | .. | .. | .. | 1,299 | 1,507 |
| Loans— | | | | | |
| Repayments and payments into sinking fund | .. | .. | .. | 38,125 | 40,905 |
| Net interest | .. | .. | .. | 56,375 | 52,159 |
| Community care— | | | | | |
| Health centres | .. | .. | .. | 550 | 57 |
| Geriatric hospital patient assistance | .. | .. | .. | 15,770 | 14,783 |
| National and regional specialty services | .. | .. | .. | 2,460 | 59 |
| Sub-total | .. | .. | .. | 114,579 | 109,470 |
| Total grants to hospital boards | .. | .. | .. | 1,295,157 | 1,273,662 |

Advisory Committee on Hospital Board Funding The Minister of Health accepted a recommendation from the advisory committee that there should be a full review of the population-based funding system after 3 years in operation. The committee has agreed to study several matters before the 3-year review, and has commissioned work on 2 of them: whether flows of particular types of patients in the population-based funding model should have special weightings, and whether there are distortions in funding because some board districts have no private sector diagnostic services while others do.

A hospital board cost index has been established to adjust hospital board grants for inflation from 1 April 1984. It incorporates a new earnings index based on the hospital boards' nationwide payroll system, to measure changes in salary and wage rates, and the existing hospital price index, which measures changes in other costs.

Policies for 1984-85 Allocations Overall funding policies for 1984-85 represent a continuation of restraint and downward pressure on hospital board expenditure.

The past policies which enabled boards to obtain commissioning grants for the operating costs of new facilities without reference to comprehensive service plans and the equity of existing funding are to be discontinued from 1 April 1984. Thereafter boards which are financially disadvantaged may apply for service development grants for this purpose. Other boards may receive bridging grants only, to give them time to commission new facilities by reorganising resources amongst existing activities. In both cases approval of funding is conditional upon acceptable service development plans being submitted.

Levels of restraint similar to those applied in 1983-84 and linked to the boards' service plans and forecasts of entitlements are to be again levied on financially advantaged boards.

However, an additional \$6.9 million, representing 0.6 percent of the existing provision of funds for hospital boards, was approved by the Government for 1984-85. This "service maintenance factor"

was provided in partial recognition of the pressures on hospital board services arising from the effect of demographic changes, particularly the ageing of the population. These funds will be allocated at the discretion of the Minister to boards shown to be disadvantaged, and, to a lesser extent, to boards shown by the funding system to be at equity.

Service Development Grants A number of financially disadvantaged boards submitted service development plans and requests for funds. Five had their allocations increased, and the remainder were still under consideration at 31 March 1984.

Additional funding approved during 1983-84 under these new policies amounted to over \$7 million a year in ongoing grants and a commitment to add almost an additional \$2 million a year later. To date the funds for these grants have been provided exclusively through the restraints placed on financially advantaged boards.

National Resource Management Advisory Committee There have been several initiatives in the field of resource management this year.

In 1981 the department, with the agreement of the National Resource Management Advisory Committee (NRMAC), contracted with Massey University for a review of hospital budgetary and associated systems. This project was to be undertaken in 5 stages over 3 years. The first stage has been completed but because of staffing deficiencies the university is unable to complete the remaining stages.

NRMAC has now assumed responsibility for promoting further action. It is setting up a project team for this purpose composed mainly of hospital board officers. The team will be required to take into account developments since the Massey project commenced.

One of the most important developments has been the generation of new interest on the part of the Public Expenditure Committee (PEC). The PEC Subcommittee on Administrative Departments has, in defining its objectives, stated:

“The committee is studying the allocation of health care funds. In particular the committee wants to identify the specific public expenditure costs of different health care components within the health service.”

This objective, and the impetus towards planning and efficient use of resources on a service-by-service basis given by the population-based funding formula, has highlighted the need for better financial management data. A group of hospital board treasurers and accountants, under the leadership of the division's acting chief management accountant, has compiled a document of data

requirements. Pilot projects to prototype the requirements are now being set up in 2 hospital boards. The systems selected can be extended to include a wide range of finance and resource management modules.

Carry Forward of Over/Underexpenditure At the end of 1982-83, 18 boards took advantage of the new provision described in the last annual report and \$6,559,681 of underexpenditure and \$650,535 of overexpenditure was carried forward into 1983-84. Twenty-four boards are carrying forward sums amounting to \$11,702,700 in underexpenditure and \$1,560,000 in overexpenditure into the 1984-85 financial year.

Thus boards are availing themselves of the flexibility in resource use made available by the new provision and the previous incentive to indulge in unplanned spending at year's end has been removed. More importantly, boards have been able to plan and execute projects with non-recurring costs which effect permanent reductions in ongoing operating expenditure without recourse to the use of scarce capital funds.

HOSPITAL WORKS AND DEVELOPMENT PROGRAMME

The relatively low level of expenditure on the hospital works programme reflects the completion of a number of large projects in recent years and the development of improved procedures for the justification and planning of new projects. However, with a number of substantial projects now under construction or in the planning stages, further reductions in the programme level over the next decade are unlikely.

Actual expenditure since 1979-80 is:

| 1979-80 | 1980-81 | 1981-82 | 1982-83 | 1983-84 |
|-------------------|-------------------|-------------------|-------------------|-------------------|
| \$(000) 65,165 | \$(000) 54,217 | \$(000) 46,547 | \$(000) 45,560 | \$(000) 38,847 |

Details of expenditure for 1983-84 are shown in table 2 of the appendix.

Emphasis was given through the year to improvements to paediatric facilities. New buildings are in planning for the Auckland and Wellington paediatric units, and the Otago Hospital Board was given authority to call tenders for a substantial conversion of an existing building to provide a modern paediatric unit. Another priority is the upgrading of oncology services in Auckland where the board was authorised to call tenders for a new oncology building. This follows recommendations of the Committee on Cancer Treatment Services.

Planning procedures have been further improved. Boards now need to more carefully analyse capital planning in relation to financial resources and service planning.

The Stage III redevelopment of Christchurch Hospital progressed to the preparation of working drawings for the main block and sketch planning for the oncology and pathology buildings, following a thorough review of the project by a committee set up for the purpose. This review resulted in savings in area and cost.

DESIGN AND EVALUATION UNIT

During the year a substantial amount of work was done on the replacement of Christchurch Hospital and the new children's hospitals in Auckland and Wellington. In addition there has been significant project work with at least 16 other hospital boards. This supporting and advisory role to boards continues to assume increasing importance.

The unit has continued to use its evaluation techniques to provide boards with information which can be used for their planning and to make better use of existing resources.

About 420 requests for advice from hospital boards, their architects, departmental officers, and other agencies were dealt with during the year (there were about 260 in the previous year). The unit continues to hold a wide range of reference material and maintain contacts with similar units overseas with whom information is exchanged. It also continues to be involved in staff training in this specialised field.

NATIONAL AND REGIONAL SPECIALIST MEDICAL SERVICES

In September 1983, approval for the second 3-year National and Regional Specialist Medical Services Programme was announced. The programme aims at a continued upgrading of specialist services required nationally and regionally, the total equipment cost being just over \$15 million for the 3-year period.

To improve cancer treatment, new megavoltage machines were provided for Auckland, Palmerston North, Christchurch, and Dunedin, as well as CT scanners for Hamilton and Palmerston North, and the upgrading of the Wellington CT head scanner to a full body scanner. Additional cardiac thoracic surgical equipment was provided for Auckland and Wellington. Provision for diagnostic virology equipment for Auckland, Wellington, and Christchurch was made in an effort to develop a regional service closer to the involved clinical areas. Equipment was also planned to improve blood transfusion

services in Auckland, Hamilton, Palmerston North, and Wellington, and Christchurch's request for neonatal intensive care unit equipment was approved.

HOSPITALS ADVISORY COUNCIL

During the year the council investigated 3 applications by hospital boards to close institutions. The Minister approved its recommendations that Milton Maternity Annex and Parkside Hospital (Dunedin), a geriatric hospital, be closed, and that Mosgiel Hospital remain open.

The council recommended against the establishment of a national bone marrow transplant unit, as it is likely that new techniques and drugs will allow transplants to be offered at more rather than fewer locations. As well, improvements in other aspects of cancer therapy may reduce the number of cases for whom bone marrow transplants are required.

At the Minister's request the council considered the report on the Blood Transfusion Service in New Zealand. This followed a national review of the service undertaken by the Transfusion Advisory Committee with some additional co-opted members. While agreeing with most of the recommendations, the council advised against a proposal that the central administration committee be comprised almost entirely of professionals involved in service provision and instead recommended a small committee of management with several lay members. This committee could establish its own technical advisory groups.

The council also recommended that 2 of the first considerations of this committee should be whether there need be any change in the funding of the service and whether a fractionation facility should be established in New Zealand. The Minister agreed to these recommendations.

SOCIAL WORK SERVICES

At 31 March 1983, 26 hospital boards employed a total of 553 people (501 full-time equivalents) in social work or related counselling positions within their hospital and community care services.

The present emphasis on service planning requirements has led to more progress in defining specific social work responsibilities in each service. It has also focused attention on services which require high social work input. Services for the elderly, mental health services, and alcohol dependency programmes are amongst those which require extensive social work input, not only throughout assessment, treatment, and rehabilitation but also in the development of alternatives to hospital care.

NATIONAL HORMONE COMMITTEE

This committee controls the collection, extraction, ampouling, and testing of human growth hormones in New Zealand. With collection continuing at over 4000 human pituitaries per year this remains as one of the highest collection rates in the world.

Production is at a level of 10 000 ampoules per year, representing a market value, if purchased commercially, of \$1,274,000. Production costs are less than 10 percent of this value. The number of patients undergoing treatment with human growth hormones has increased by 60 percent in the last 2 years to a total of 58 in 1983.

During the year a new ampouling facility was built and equipped at the Carrington Intravenous Solutions Unit in Auckland at a cost of some \$120,000. The unit has not only raised the safety standards of ampouling, but will also have spare capacity which can be used for ampouling a growing number of blood products produced in New Zealand.

The hormone assay service provided by laboratories at Auckland, National Women's and Princess Margaret (Christchurch) hospitals continues at a level of over 50 000 tests per year. Quality control is provided by Christchurch Hospital Laboratory.

CARE OF THE TERMINALLY ILL

In September 1983 a report entitled *The Care of the Terminally Ill in New Zealand*, which sets out general principles for services for the terminally ill, was released.

The report indicates ways in which hospital boards can ensure that the care given to terminally ill patients (whether at home, in hospitals, or in hospices), and the support provided to their families, reflect the high standards which the hospice movement has shown can be achieved. Hospitals can approach the care of the terminally ill in different ways. For instance, they may designate a number of hospice beds specifically for the terminally ill, or they may develop hospital support teams. Already a wide variety of approaches are being developed and a will to improve terminal care and bereavement services is evident.

It was decided that separate funding to support hospice services would not be appropriate. Instead funding is to be provided through existing channels, with hospital boards and hospices able to enter into contracts for the provision of services. Thus hospices can receive some public financial support and have access to the advice and guidance of the boards' clinical, nursing, and managerial staff. Hospital boards in turn will benefit by having the opportunity to co-ordinate institutional and community services and to draw on the expertise of hospice staff to advise and train their own staff. As

truly effective co-ordination of services for the care of the terminally ill can only be achieved at a local level, the government has given hospital boards prime responsibility for ensuring that such co-ordination is achieved.

To guide development, boards were asked to review the needs of the terminally ill in their area by setting up a service development group with representatives from the primary care services, voluntary sector, specialists, and hospital staff.

MENTAL HEALTH

The activities of the mental health section were focused in 1983–84 to a greater extent than in previous years on forensic psychiatry, that is, the psychiatric care of offenders. However, while such issues have created considerable public interest, the department has not allowed them to interfere with projects and initiatives in the more general mental health area.

Donaldson Commission of Inquiry This inquiry was established following a homicide and subsequent suicide committed by a patient on leave from a psychiatric hospital. The Department of Health prepared detailed submissions relating in particular to special patients. After the Commission of Inquiry presented its report to the Governor-General on 22 August 1983*, a Committee of Officials was set up to consider and report on policy issues. This committee has discussed the full range of issues relating to offender patients, including not only the category of dangerous patients referred to in the Donaldson Report, but also the category of “psychologically vulnerable” prisoners who were the subject of the Department of Justice’s *Report of the Working Party on Psychiatrically Disturbed Prisoners and Remandees, 1981*.

Oakley Hospital The importance of implementing the recommendations of the Oakley Hospital Committee of Inquiry has been given considerable emphasis by the department, and there is a departmental representative on the Oakley Hospital Monitoring Committee. The changes which have resulted from the implementation of the recommendations, in particular the greater stress on the need for a therapeutic environment and approach to patient care, have highlighted difficulties in the provision of services for vulnerable offenders.

*NZ Commission of Inquiry into the Circumstances of the Release of Ian David Donaldson from a Psychiatric Hospital and of his Subsequent Arrest and Release on Bail. — *Report of the Commission of Inquiry*/ P.B. Temm (Chairman). — Wellington: Government Printer, 1983.

Lake Alice Hospital Dr Sydney Pugmire retired on 30 September 1983 from his position as medical superintendent of Lake Alice Hospital, which he had held for 18 years. The Head Office Coordinating and Consultative Committee for Lake Alice Hospital continued to give support and assistance to the hospital throughout the year.

A district inspector's inquiry concerning the behaviour of nurses in Maximum Security Villa was authorised pursuant to section 58 of the Mental Health Act 1969. The inspector's report was forwarded to the Police Department, who, on the basis of their own inquiries, concluded on 26 June 1983 that there was no basis for preferring criminal charges against anyone.

The report made several recommendations relating to, for example, the environment and policies of Maximum Security Villa. Some of these have already been implemented.

The panel at Lake Alice which reviews Maximum Security Villa patients increased the number of its sittings from 2 to 3 times a year, and has clarified its policies and procedures. It is now routine that all patients in Maximum Security Villa are reviewed at least once a year, and that all new patients are seen at the meeting of the panel following their admission. The success of the panel system at Lake Alice has pointed to the desirability of establishing a more formal system of review for all special patients in other psychiatric hospitals in New Zealand.

Alcohol-related Issues An inter-divisional committee under the chairmanship of the Director of Mental Health met regularly throughout 1983. It prepared a policy statement on alcohol which was favourably received by hospital boards and organisations with an interest in alcohol matters. The committee is now following up action on 2 important matters: completing the review of the Alcohol and Drug Addiction Act 1966 and exploring the need for an Employee Assistance Scheme within the department (already in place in some other organisations).

The Transport Amendment No. 3 became law in December 1983. This amendment provides for any person convicted of 2 drink-driving offences, 1 of which must be over a specified blood or breath level, to be referred to a designated Alcohol Assessment Centre. The department has approved some alcohol assessment centres for the purposes of the Act in major centres.

Legislative Review Work continued throughout 1983 on reviewing the Mental Health Act 1969. Approximately 90 comments were received on the department's initial proposals. The proposals are now being reformulated and will be discussed with selected organisations during 1984.

The Department of Justice introduced towards the end of 1983 a Criminal Justice Bill. The sections of the Bill which relate to mentally disordered offenders are of crucial significance to special patients in psychiatric hospitals, and the department forwarded its submission on the Bill in February 1984 to the Statutes Revision Committee.

Issues Relating to Intellectually Handicapped People Some hospital boards have developed proposals which would enable them to construct or purchase a variety of facilities for the long-term care of intellectually handicapped people with physical disabilities.

The complexity of the issues involved has prevented rapid progress, but discussions have been held, in particular with the New Zealand Society for the Intellectually Handicapped, as a prelude to more definitive planning.

Official Visitors Following a recommendation made in 1982, over 20 official visitors were appointed by the Minister of Health in 1983-84. Guidelines were prepared by the department on their functions and duties.

Review of Psychiatric Hospitals and Hospitals for the Intellectually Handicapped In July 1983 the Minister of Health announced that a major review would be undertaken of all psychiatric hospitals and hospitals for the intellectually handicapped in New Zealand. This review includes an overview of the physical and environmental aspects of psychiatric hospitals, a descriptive study from a lay point of view on the quality of life offered to patients, and the professional and clinical standards of care and treatment. The review should be concluded in mid-1985.

AMBULANCE SERVICES

Much of the progress that has taken place in ambulance services in recent years has been made possible by the use of a trust fund, which is administered by the Department of Health, under what is now section 74 of the Accident Compensation Act 1982. All expenditure from the fund must be used for the benefit of ambulance services and be approved by the Minister of Health. Currently the fund is used to meet the cost of operating the National Ambulance Officers Training School, double manning of emergency ambulances, assistance with purchasing of ambulances, and other special projects.

The ACC is required to pay into the fund the reasonable costs of the ambulance transport of accident patients. During the year a report by Mr V. C. Fargher (former Chief Executive of the Waikato Hospital Board) on the cost of ambulance services in New Zealand was approved by the Minister of Health for release to interested parties. This report has assisted the Department of Health and the ACC to determine a satisfactory basis for assessing the level of ACC contributions to the fund.

CHAPTER 8

NURSING SERVICES

HOSPITAL NURSING SERVICES

In the past 12 months, a number of chief and principal nurses have retired and there have been difficulties in filling almost all the vacancies even though the department has assisted boards with their recruitment efforts. This problem persists even when there is known to be a pool of nurses well prepared for these positions. The reluctance of nurses to offer themselves for leadership at this level is a cause for concern.

Among the remainder of the hospital nursing workforce, most hospital boards reported a marked decline in staff movement, particularly during the third quarter of the year. This was seen to be partly due to the diminishing reliance on student nurses as employees, and also a result of the prevailing economic climate. The effect was a change in employment opportunities for nurses, with vacancies less likely to be in their preferred clinical and/or geographical area.

In response to the marked down-turn in vacancies for nurses, the immigration policy for overseas registered nurses was further restricted late in 1983. As before, the revised criteria reflect the local situation in terms of nursing qualifications and manpower needs.

As hospital boards follow a policy of replacing unqualified staff with registered and enrolled nurses, the ratio between the 2 groups continues to improve across all hospital services. Considerable emphasis has been placed on building up numbers of nurses who are qualified to work in multiple settings and able to provide comprehensive nursing services.

Senior nurses have been increasingly involved at both national and board levels in preparing service development plans for hospital board services. This will continue to be a high priority for nurses because of their role and extensive involvement in all aspects of the health services.

Hospital boards have continued to support selected registered nurses to undertake bridging courses and Advanced Diploma of Nursing courses. Their support of nurses who are studying at technical institutes and university demonstrates their awareness of the need for well prepared nurse clinicians and managers. Their efforts result in a steady improvement in the level of nursing skills in all their services.

With the benefit of a better qualified staff, most hospital nurse managers made considerable progress during the year in formulating

or refining their standards for nursing practice. A number also moved further towards introducing methods for monitoring and evaluating their nursing services. The department has responded to requests for assistance by providing resource people for boards' inservice study days.

It became more apparent during the year that throughout the country, principal nurses with a qualified nursing staff are able to introduce improved patient-centred nursing work methods. The concept of patient-centred nursing has become increasingly attractive to nurses, who see its implementation as a way to make more effective and efficient use of their professional staff.

During the year there was resistance by some nursing staff to hospital boards developing more comprehensive services. In the Otago Hospital Board, a nursing group resorted to industrial action because they perceived the development of a comprehensive service for the elderly in 1 centralised location as threatening their jobs, career opportunities, and conditions of employment. This event again highlighted the need for bridging courses and opportunities for ongoing education for nurses if they are to be fully utilised in comprehensive health services.

Psychiatric hospital services and therefore psychiatric nursing services continued to attract considerable public interest throughout the year. The recommendations in the report of the Oakley Hospital Committee of Inquiry* released in February 1983 have given a direction for work being undertaken by the department and hospital boards in improving and developing all aspects of psychiatric nursing service.

The introduction of the Nurses Amendment Bill late in 1983 gave rise to considerable professional disquiet among midwives. This resulted from a misunderstanding of the intent of the section on the practice of midwifery. Changes introduced as safeguards for patients were erroneously seen by some nurses and other members of the community as means of limiting opportunities for home births.

During 1983 the department continued to offer its health bursary for students taking the comprehensive nursing course at technical institutes. In November 1983, 323 of the students sitting the Nursing Council's examination for registration were under bond to the department. However, because of the changed employment situation, the number of bonded nurses available for direction exceeded the number of vacancies offered by hospital boards.

A review of the health bursary scheme was undertaken. As a first step towards matching the number of bursaries and the vacancies available, the number of bursaries being offered in 1984 has been limited to 968—the same number as in 1983.

*NZ Committee of Inquiry into Procedures at Oakley Hospital and Related Matters. — *Report of the Committee of Inquiry*. — Wellington: Government Printer, 1983.

COMMUNITY HEALTH NURSING SERVICES

The department's public health nursing service continues to monitor its priorities to meet departmental policies and changing community needs.

Public health nurses were involved with bureau priority programmes, which included deafness prevention for children and workers, adolescent health, addiction prevention, and agricultural health. Public health nurses continued to carry high infant welfare care loads in Northland, Hamilton, Rotorua, Gisborne, Napier, and Wellington health districts. The proportion of new births under their supervision in these districts varied from approximately 20 to 50 percent.

Public health nurses were also involved in developing services to secondary schools. In addition, adolescent services were provided to "at risk" community groups involved in special programmes.

The school entry health assessment was reviewed and revised and from 1984 all children entering school will be examined.

Emphasis has been given to Maori health and programmes developed by the Department of Maori Affairs. These included Whanau, Te Kohanga Reo (language nest), marae-based projects such as at Waahi, where a public health nurse is involved in training 3 voluntary health workers (Nga Ringa Aroha), and other programmes evolving in the Rotorua district.

Public health nurses have continued to become more involved in district occupational health programmes. These include assistance with control of noise hazards at the workplace and the education of workers exposed to noise, as well as education programmes concerned with agricultural health and the safe use of chemicals.

A workshop for principal public health nurses and nurse advisers from the Plunket Society examined the concepts of quality assurance and primary health care. Steps in the development of a quality assurance programme were identified and discussed.

NURSING EDUCATION AND MANPOWER PLANNING

On 3 October 1983, the Government approved the development of a new 3-year comprehensive course at Otago Polytechnic with an intake of 48 students.

Approval was also given for increases from 1984 in the intakes of students at Nelson, Christchurch, Manawatu, and Manukau technical institutes. This is a continuation of the 3-year rolling programme for the transfer of nursing education to the general system of education. Approval in principle was also given to increasing the total intake by 150 students in 1986, subject to confirmation by the Nursing Manpower Planning Committee. These latest additions will make provision for an annual intake of 1168 students into comprehensive nursing courses.

At present 12 technical institutes offer the 3-year comprehensive nursing course and 11 hospital schools of nursing conduct 3-year hospital-based programmes. Three hospital schools will cease to take in 3-year general and obstetric students after 1984. Fifty-four percent of new entrants were in comprehensive courses on 31 March 1983.

There were 730 new entrants into the 1-year programme for enrolment. The apparent increase in intake numbers over 1982, when there were 674 new entrants, can be explained by changes in timing of intakes which caused the 1982 figures to be artificially deflated. The number of new entrants to this course with University Entrance or better has increased from 8.5 percent in 1982 to 10.8 percent in 1983, which indicates that some schools appear to be selecting students whose educational levels may give rise to inappropriate career expectations.

In collaboration with the Department of Education and the Department of Maori Affairs, methods to encourage Maori and Pacific Island young people into nursing courses have been developed. A successful 1-week pre-nursing course was held at Manawatu Polytechnic, and approval has been given for 4 similar courses to be held at other centres during 1984.

Post-basic courses in clinical nursing were offered at 4 technical institutes for a total of 148 students. University courses in nursing studies at the undergraduate and graduate level were available at Massey University.

Full-time awards for university study continue to be offered. Current financial constraints restrict employers' ability to recommend awards for all nurses who seek approval, but since 1974, 62 awards including 3 for postgraduate study have been made.

Increases to bridging courses approved by Government in October 1983 will provide a total of 35 places spread between Auckland, Wellington, and Nelson technical institutes. The increases were in response to a growing demand from employers and nurses for these courses to be offered in main centres.

The Nurses Act 1977 was amended during the year and the Nurses Amendment Act 1983 comes into force on 1 April 1984. The main changes in the Act relate to the inclusion of a lay member on the Nursing Council of New Zealand, alterations to the sections covering the notification of disability or suspected disability in practising nurses, the publication of orders of disciplinary procedures by the council, offences related to obstetric nursing, and functions and powers of the medical officer of health in relation to obstetric nursing.

Manpower Planning Analysis of information collected on the nursing workforce indicates that at 31 March 1983 there were at least 32 863 people employed in nursing in New Zealand. This

represents a small apparent decrease (0.3 percent) on the previous year. This can be partially accounted for by the continuing changes in the composition of the workforce. Of the total nursing staff 70.6 percent were qualified nurses, 17.9 percent were unqualified staff, and 11.4 percent were students in hospital board schools of nursing. These figures compare with 1982 percentages of 66.8, 19.9, and 13.2 respectively. Fewer qualified nurses are needed to replace students and unqualified staff because of savings in study days and clinical experience requirement for students. An additional factor in the apparent decrease in numbers of nurses is that there was a decrease in response to the survey from some employers of nurses. A document describing the size and composition of the 1982 nursing workforce was published in November 1983*.

The Nursing Manpower Planning Committee has met 3 times. In August an interim report was furnished to the Minister of Health. On the basis of initial projections of nursing manpower supply and requirements it was recommended that intakes into all 3-year programmes be maintained within the range 1200–1500 and that intakes into the programme for enrolment be progressively reduced to 300–350. Approved intakes for the year ending May 1984 are 1369 into all 3-year programmes and 463 into the programme for enrolment.

Comments on the report of 9 nursing manpower planning working parties have been received. As a result of these comments, a revised set of guidelines for estimating nurse staff requirements has been prepared. These guidelines have been circulated for further comment. The committee plans to produce a further interim report on the basis of refined projections of nursing manpower supply and requirements.

**The nursing workforce in New Zealand, 1982*. — Wellington: Division of Nursing, Department of Health, 1983. (Blue book series; No. 17).

CHAPTER 9

ADMINISTRATIVE SERVICES

Management Support During 1983-84 a management support team followed up its 1982 review of health benefits by implementing substantial changes to the department's administrative procedures for health benefits. These changes involved the institution of new enrolment and claiming procedures for dental benefits and the consolidation of the 5 health benefits payment offices in the South Island into 1 regional office, located in Christchurch. A similar consolidation of the 12 North Island health benefits payment offices will be considered during 1984-85.

In addition, the Management Support Unit reviewed the department's finance and stores organisation, undertook office inspections in 5 district health offices and 1 head office unit, evaluated the operation of the internal control system in 2 district health offices and Lake Alice Hospital, and monitored the department's performance in relation to the Official Information Act 1982.

Rationing Public Health Resources The department is developing a more effective framework for allocating public health staff to districts. Groups such as school dental nurses have for some time been deployed on the basis of population and social-environmental factors such as fluoridation. This approach is now being extended to public health nurses, inspectors of health, and clerical staff.

Workload for service staff is determined predominantly by the population and age-structure of the district and is also influenced by social and environmental factors. Research staff are attempting to develop an objective measure of "need" as it relates to the rationing of health promotion and health protection resources.

Training and Development A greater emphasis is being given in training policies to meeting individual needs. Short intensive courses on specific management topics have commenced for middle to senior level managers. A structured career development scheme has been introduced for clerical/executive staff to ensure that they receive a wide range of experience, together with educational advice and relevant off-the-job training.

Most of the first intake of the Health Services Junior Management Training Scheme are now in substantive posts. The overview period of the second intake is complete and trainees are working on their first managerial assignments.

Emphasis will be given in 1984 to planning developmental training for new recruits to the department.

MANAGEMENT SERVICES AND RESEARCH UNIT

Programme of Work With the publication and wide distribution of a detailed annual report on the work of the unit a formal work programme cycle was completed for the first time last year. The planning cycle ensures that work is undertaken in consultation with appropriate divisions or inter-divisional committees of the department. It is also a basis for reviewing continuing commitments, relating new work to emerging developments, and resource planning and management within the unit.

Equitable, Efficient, and Effective Use of Resources Technical and research support has continued to be given for the population-based hospital board funding formula. A report explaining the model used is being prepared for publication. Related work on the hospitals cost index has been completed.

Support is also being provided for the district health office staffing allocation initiative. A report on the proposed model is in preparation.

Other studies have included the organisation and utilisation of hospital accident and emergency departments, utilisation of inpatient hospital services by populations of hospital districts, the work of public health nurses, and maternal and infant care services. In the review of departmental functions or activities, the work of the Management Services Team has been co-ordinated with other components of management support.

Information for Planning The unit has been actively involved in information initiatives, cost-effectiveness studies, and planning consultancies with health agencies.

Over the years MSRU has developed its role in the collection and analysis of information about trends in the use of resources and for the planning of services. A significant milestone in this work was reached in December 1983 with publication of an annotated compendium of health statistics, *Health Facts New Zealand*. As well as providing health-related demographic data, the publication includes information on health statistics, health risks, and on most aspects of the health care system. Here, for the first time, an effort has been made to gather and present all the available statistics which bear on health and health services in New Zealand. The aim is to explore issues, to demonstrate trends, to identify problems, and to help in the setting of objectives and priorities for the health system. The volume can be used as a guide to but does not necessarily contain the most up-to-date statistics. The next step will be to produce a draft document on health service priorities and objectives for consideration by the Board of Health and the Government. This work is under way.

Staff have worked with hospital boards, notably in Auckland and the South Island, on a consultancy basis to assist them in preparing service development plans required by the department under the new funding arrangements. This is in addition to assistance provided centrally in the development of service planning guidelines.

The information needs of the service planning approach have been taken into account in the development of new initiatives. Emphasis has been given to social gerontology, mental health, and health promotion, where research programmes are under way. Field work has been completed on a survey of the institutionalised aged in Otago and on a descriptive study of the role of psychiatric hospitals. The results from these studies will be useful in national policy development and in the formulation of service planning guidelines.

Community Health Promotion Work in this area is integrally related to work concerned with service development and resource allocation. A special report on community groups working for health is now completed and will be used as a working document to increase understanding and communication between community health development and self-help groups and professional health services. Issues of *Choices* newsletter continue to serve a similar purpose. In a departure from normal newsletters, a special issue was prepared in late 1983 on patients' rights. It covered a range of viewpoints from consumer groups, health agencies, and professional associations.

The need for greater cross-cultural communication in health matters becomes more important as calls intensify for recognition of the special health problems of ethnic groups and for separate facilities for such groups. During the year the unit's work in cross-cultural communication in health and Maori health has assumed greater prominence. One staff member has been involved with a project focusing on the relationship between Maori people and western health professionals on the East Coast.

Another area of priority in community health has been child health. During the year the draft of *Recording Child Health and Development*, a professional handbook to the *Health and Development Record*, has been prepared for publication in mid-1984.

Links with the Research Community Staff from the unit continued to be involved, both formally and informally, with research units of other government departments, universities, and health care agencies. This involvement takes the form of consultancy, information sharing, joint research, and seminar activities. One feature of this was the joint publication by the department and the Medical Research Council of the *Guide to Health Services Research in New Zealand*. As well as containing information about the organisation

and funding of health services research, the guide catalogues and describes some 700 projects in this field undertaken since 1975. It is intended to update this reference book every few years.

NATIONAL HEALTH STATISTICS CENTRE

During the year there was an increased demand for health statistical information by managers and planners of health services at both the central and local level.

Factors influencing this development included:

- the population-based model for funding hospital boards. Local (board) managers sought information to check the accuracy of model data specific to their own populations;
- the need to review resource allocation and utilisation within boards and hospitals in the light of current and forecast restrictions;
- planning of future service requirements at both the local and national levels, having regard to latest population projections;
- planning for services required for specific sub-groups within the population—the elderly, the handicapped, etc.;
- comprehensive data sets of health statistical information for hospital boards and others looking at integrated health services, regional development, etc.

The increased use of patient data by boards for operational purposes will provide an incentive for them to ensure the accuracy and timeliness of information reported to the centre.

Computer Processing and Statistical Reporting Computerised methods for current reporting systems are now in place, but a considerable amount of work remains to be accomplished in converting the historical data base for the cancer and psychiatric registers. The other major step yet to be completed is the adoption of the computerised admission/discharge system by those hospitals not yet using this facility. Over 50 percent of the 414 000 public hospital discharges are still reported manually on individual discharge returns.

Medical Notification of Birth There were 50 521 medical notifications received in 1983, an estimated 97 percent coverage of all births. Congenital anomalies were reported in 1155 infants, or 2.3 percent of all births notified. A number of suspected anomaly clusters were investigated during the year but with no positive findings.

A question on maternal rubella immunity was introduced into the notification form in 1983. The response rate was 75.2 percent,

with 93.1 percent of these indicating immunity and 6.9 percent reported as susceptible to rubella. A total of 1797 notifications reported immunisation in the immediate post-partum period.

Cardiac Surgery The computerised cardiac surgery register was implemented during the year. Patients on waiting lists at 1 January 1983 and subsequent activities in cardiac surgery units were registered. When the management committee met on 25 October 1983, it reviewed data reported for the January-June period, identified problems with under-reporting, decided on 31 January 1984 as the deadline to complete 1983 reporting, and agreed on the content of statistical tables required from the full 1983 data set which will be available in April 1984.

Publications The timeliness of New Zealand health statistical data compares more than favourably with overseas publications of a similar nature.

During the 1983 calendar year the centre published 14 reports and responded to over 1000 ad hoc requests for data.

Infant and Late Fetal Mortality 1973-82 The number and rates per 1000 live births for infant, neonatal, and post-neonatal deaths and the numbers and rates per 1000 total births for late fetal deaths (stillbirths) for 1973-82 are shown in table 3 of the appendix. The infant mortality rate improved from 16.2 in 1973 to 12.0 in 1982. There is a downward trend in neonatal and late fetal death rates.

Table 4 of the appendix shows causes of infant deaths in 1981 and 1982. As a new certificate of causes of fetal and neonatal death was introduced in 1978, figures for 1981 and 1982 are not comparable with those for years prior to 1978.

Selected Causes of Death 1955-81 The numbers and rates per 100 000 mean population of selected causes of death for 1955-81 are shown in table 5 of the appendix. The 1955-78 figures have been aggregated into 5, 5-year periods and 1, 4-year period to minimise the influence of yearly variations. The number of deaths refers to total deaths registered during each period; the rates are the mean annual crude rates for each period.

In 1979 New Zealand adopted the Ninth Revision of the World Health Organisation's International Classification of Diseases. As a result, care must be taken when comparing 1979-81 figures with those for previous years, particularly the rates for chronic rheumatic heart disease, other forms of heart disease, bronchitis, asthma, and nephritis and nephrosis.

The highest death rate in table 5 is for the group "other forms of heart disease and hypertension", which includes coronary heart

disease. The death rate from these causes had been decreasing since 1970 but Ninth Revision classification changes have resulted in an increased rate from 1979.

There has been a marked upward trend in deaths from malignant neoplasm of bronchus, lung, and trachea. The mean annual rate for 1955-59 was 17.3. In each subsequent 5-year period the rate increased, the 1981 level being more than twice as high as that for 1955-59. Conversely, the death rate from all other malignant neoplasms fell slightly in the period between 1955-59 and 1965-69, but has increased again since 1970 to a point higher than the mean 1955-59 rate.

The death rate for bronchitis increased substantially between 1955-59 and 1975-78, as did that of another cause of death associated with cigarette smoking, cancer of the lung. The decrease in the rate of bronchitis since 1979 is the result of the Ninth Revision changes, a number of deaths previously assigned to bronchitis now being included in the category of "all other causes".

High rates from other accidental and violent deaths were recorded in 1979 and 1980 after the Mount Erebus disaster. Data for 1981 are more comparable with 1978.

There has been a very significant reduction in deaths from tuberculosis, the 1955-59 mean annual rate of 10 per 100 000 being 6 times higher than the rate recorded in 1981. The rates for all other infectious and parasitic diseases and active rheumatic fever and chronic rheumatic heart disease have also fallen. A small part of this latter reduction since 1979 is explainable by changes in the International Classification.

Death rates from hyperplasia of prostate and congenital anomalies show an overall decline. The fall in death rates from congenital anomalies is probably associated with the falling birth rate.

Alcohol-related deaths increased rapidly in the early 1970s to a peak in 1975. This was probably the result of certifiers being less reluctant to enter more specific information on death certificates when alcohol abuse became more freely discussed in the community. In 1976, however, the rate of 58 deaths per million mean population showed a 19 percent decrease on the 1975 rate of 72. From that time, rates have remained relatively stable ranging from 65 per million in 1977 to 55 in 1981. Of the 196 deaths from diseases of the liver and gallbladder in 1981, 47 percent were due to alcohol liver disease. Other alcohol-related conditions are included in the category "all other causes".

HEALTH DATA PROCESSING

The work of the Data Processing Division during the year has been directed along 2 main channels: the continuation of service to

existing users and further implementation of new users; and a major commitment to evaluation of tenders for replacement equipment, its installation, and conversion of existing systems.

New implementations have proceeded on the basis that the present admission/discharge and nationwide payroll systems would be available on the new equipment. At present, 19 boards use the nationwide payroll system, and all but 1 of the remaining boards have requested implementation. Fifty-seven hospitals now use admission/discharge, with a further 5 having requested implementation.

On 8 August 1983 the Government approved the purchase of new equipment to replace the existing system. This followed an intensive evaluation under the supervision of the State Services Commission of 40 tenders of various kinds, ranging from complete replacement of the present system to minor items of equipment and software. This evaluation also involved hospital boards which had expressed a wish to participate, and was supported by the Advisory Board on Health Services Computing.

The eventual selection of IBM New Zealand Limited as the supplier of the main site equipment has now laid the foundations for a nationwide network providing for a range of centrally-based systems, as well as for stand-alone facilities able to be linked with the system.

The division was subsequently committed to an intensive training programme followed by major projects for the conversion of the nationwide payroll system and the redevelopment of admission/discharge using the new software tools available on the replacement equipment. Conversion and initial stages of redevelopment are now complete, and pilot implementations of both payroll and admission/discharge systems are currently being operated and evaluated.

New systems are at present being implemented for stores management and financial control, and a blood transfusion system that includes donor administration and blood product stock control is being developed. A small dietary system for operation on microcomputers has been developed and is producing considerable savings in food costs in some hospitals.

For the Department of Health, work is in progress on an imported food surveillance system and occupational health profiles. Other major applications are under investigation.

The acquisition of new technology has also enabled the division to introduce information centres through which users can be helped to develop their own small systems.

Since 1980, when the division's management and operational structure was reviewed, real operating costs have been reduced by 8 percent, while implementations of core systems have increased

from 8 boards to 19 in 1984—a significant improvement in performance. The new systems now being implemented increase the computing capacity by some 4 times to meet the forecast workload, but no increase in operating costs is anticipated.

The capital costs of the replacement programme will be recovered, along with operating costs, in new charge rates to be announced in the forthcoming financial year.

Internationally, the use of computers in the delivery of health care has tended to lag behind other applications. However, the last few years have seen a very high rate of growth as the computer industry has brought more resources to bear on this sector, and the health professions have come to recognise the benefits obtainable from computing, particularly in times of restraint on the funding available for health care. New Zealand is no exception, and the demands on the Data Processing Division have increased significantly in the past 2–3 years. With such a backlog to overcome, it is essential that a steady rate of implementation should be maintained. To this end the Government has endorsed a programme of development as recommended by the Advisory Board on Health Services Computing and has made appropriate provision in its computer equipment programme, subject to financial approval being sought at each stage.

HEALTH SERVICES REORGANISATION: AREA HEALTH BOARDS ACT

The Area Health Boards Bill was introduced on 24 August 1983 and referred to the Health and Welfare Select Committee, which received some 95 submissions on it. As a result of these submissions a number of changes were made to the Bill. The Bill was passed in December and the Act comes into force on 1 April 1984.

The Act provides for the voluntary establishment of area health boards by bringing together the hospital board(s) and district office(s) of the Department of Health. The Act provides that an area health board has, as its primary objectives:

- the promotion, protection, and conservation of the public health and the provision of health services;
- the provision of the effective co-ordination of the planning, provision, and evaluation of health services between the public, private, and voluntary sectors;
- the establishment and maintenance of an appropriate balance in the provision and use of resources for health protection, health promotion, health education, and treatment services.

An area health board would be formed as the result of local initiative. A board can only be established where there has been a

request to that effect from the local hospital board. Before agreeing to the issue of the necessary Order in Council, the Minister is required under the Act to satisfy himself that there has been adequate consultation, planning, and preparation for the establishment of the board.

The Area Health Boards Act 1983 makes provision for the setting up of service development groups, or some other approved form of planning mechanism, to work towards the better co-ordination of the public, private, and voluntary sectors of the health services. Also a function of an area health board is to support, encourage, and facilitate the organisation of community involvement in the planning of health services. Where the hospital district involved has been formed by the amalgamation of districts on or after 1 January 1950, the area health board is obliged to appoint a community committee for each of those former hospital districts, unless on the application of the board the Minister waives compliance by the board with this requirement.

Health Service Personnel Commission This is a new institution established within the health service under the Health Service Personnel Act 1983.

The proposal to establish such a body arose from the recommendation of the Special Advisory Committee on Health Service Organisation (SACHSO) and its advisory committee on personnel matters—the Personnel Sector Advisory Committee. Both these groups were representative of health service interest organisations. SACHSO accepted that any worthwhile reorganisation of the health services needed to improve nation-wide career opportunities for staff in area health boards and hospital boards. It believed more competition and wider career opportunities would benefit health service employees and employers alike and would enhance standards of administration and the delivery of health care.

The proposal for such a commission and the framework of the Health Service Personnel Act were included in a discussion document on health service reorganisation issued in December 1982*. As general support followed the release of this document, a Bill was introduced into the House of Representatives in August 1983. This underwent a number of changes in response to approximately 60 submissions and was enacted in December.

The 4 members of the commission provided for in the Act have now been appointed and are: Mr J. R. Martin, Deputy Director-General of Health (Administrative), Chairman; Mr R. H. Kerr, Deputy Chairman; Mr R. A. Kelly, a member of the State Services Commission; and Miss R. McEwan.

**Health services reorganisation: a discussion document.*—Wellington: Department of Health, 1982.

As indicated, the commission derives its powers from the Health Service Personnel Act, which comes into full effect on 1 April 1984. Its general functions, duties, and powers cover 3 major areas. First, to determine employment conditions for employees of area health and hospital boards; secondly, to encourage, by the establishment of consistent personnel policies and practices, the development of a nationwide career service, made up of hospital boards, area health boards, and the commission; and thirdly, to ensure the co-ordination of pay fixing throughout the public sector health service.

Although the Act comes into force on 1 April 1984 there are a number of existing mechanisms that will continue until the commission has consulted and determined new arrangements. The commission will report to Parliament annually.

BOARD OF HEALTH

The Health Amendment Act (No. 2) 1982 reconstituted the Board of Health.

The Board of Health is an advisory body, operating independently of the Department of Health, which gives advice and makes recommendations directly to the Minister. It is required by legislation to have concern for all aspects of general health objectives and priorities, including: health promotion, education, and protection; hospital and other health services; the operation of related benefits under the Social Security Act 1964; and the co-ordination of the activities of private and voluntary organisations. While it is empowered to make recommendations on matters referred to it by the Minister, it may also initiate its own investigations.

The board is required to establish standing committees to cover the range of health services. Each standing committee, once established, may set up ad hoc committees to examine and advise on specific matters referred to it by the parent standing committee. The ad hoc committees will advise and make recommendations to the relevant standing committee, the standing committees to the board, and the board to the Minister.

The new board will have 12 members, including the Director-General of Health, who will be deputy chairman. These members have now been appointed and are: Dr Douglas Short (Chairman), Mrs Elizabeth Biddles, Professor Michael Cooper, Dr Mason Durie, Dr Bruce Foggo, Mrs Myra Graham, Mrs Jean McCorkindale, Mrs Valerie O'Sullivan, Mr Clive Ross, Professor Frederick Shannon, Mr Richard Speirs.

CHAPTER 10

SCIENTIFIC SERVICES

At 31 March 1984, 95 scientific staff and 35 support staff were employed in scientific services.

NATIONAL HEALTH INSTITUTE

Accommodation The transfer of the Central Regional Public Health Laboratory from leased premises in Rugby Street, Wellington South, to the new complex of laboratories and servicing facilities at Kenepuru on the outskirts of Porirua, has completed the relocation of the National Health Institute.

Concentration of all diagnostic, reference, and administration resources on a single site provided scope for reorganisation of scientific activities to eliminate duplication of some laboratory support services. Improved efficiency resulted in a significantly increased output of laboratory services in 1983-84.

Public Health Laboratory Service The Public Health Laboratory Service comprises a national reference laboratory and a central region laboratory, which are based at the National Health Institute, and 5 other regional laboratories, which are located in the microbiology departments of the public hospitals in Auckland, Hamilton, Napier, Christchurch, and Dunedin. This distribution gives medical officers of health access to laboratory services, on a regional basis, for surveillance of food and water-borne micro-organisms of public health significance and imported and local foods of potential public health risk, and for investigation of notifiable enteric diseases.

In 1983 the number of specimens analysed in all public health laboratories exceeded the 1982 figure by 11.4 percent. Increases of 30 and 50 percent were recorded in Auckland and Wellington respectively. While increases occurred in all categories of analyses, an expanded programme of shellfish surveillance for establishing harvesting criteria and an increased demand for certification of export ice cream accounted for the big increases in Auckland and Wellington.

In February 1984, the central region public health laboratory examined food and blood samples from 2 suspected botulism cases in Rotorua Hospital. Toxicity tests on blood serum showed results diagnostic for botulism antigenic type A toxin. This was the first time human botulism had been confirmed by laboratory testing in New Zealand.

Virology Laboratories Increases have been recorded each year since 1973 in the number of specimens received by the National

Health Institute for virus isolation and identification. These increases reflect an expanding awareness of the importance of diagnostic virology and a growing demand by clinicians for virus laboratory diagnostic services.

The number of clinical specimens received for isolation in 1983 was 2295 compared with 495 in 1973. Throat/nose swabs for respiratory viral aetiology accounted for 23 percent, and 59 percent were from genital/lesion swabs for a Herpes virus aetiology. In 1973, 52 percent were for respiratory virus and only 14 percent were for Herpes virus. These altered ratios highlight the change that has occurred, over a decade, in viral diagnostic requirements.

Two strains of influenza A virus were circulating in New Zealand during 1983. The H1N1 strain was predominant in the South Island and the H3N2 was predominant in the north of the North Island. The central and southern parts of the North Island had both strains circulating in nearly equal proportions.

Bacteriology and Serology Laboratories The NHI Culture Collection is being used by laboratories as a source of standard strains of organisms for reference purposes. The upsurge in *Bordetella pertussis* isolates which resulted from the 1982 outbreak of whooping cough continued for the first few months of 1983 but by mid-year had declined to the low level of 1981.

An increase was recorded in the number of pneumonia cases due to *Mycoplasma pneumoniae*. The last time such an upsurge occurred was in 1978. An increased number of cases of legionellosis was observed in 1983. Sera from 340 patients with pneumonia were examined. Forty-seven (13.8 percent) were serodiagnosed as legionellosis cases.

Both the serological and microbiological proficiency testing programmes have continued to provide a useful service to all laboratories.

Streptococcus Reference Laboratory and Staphylococcus Laboratory The laboratory continued to serotype pneumococci as part of the WHO programme to monitor pneumococcal serotypes responsible for serious human infection. Review of results for 1979–83 showed that the vaccine in current use gave an 84 percent coverage for isolates cultured from significant pneumococcal disease in New Zealand.

Cultures from a number of cases of scarlet fever were received from several centres during the year. One serotype (M49) was responsible for over 90 percent of cases. An associated increase occurred in the number of cases of acute glomerulonephritis involving M49.

Biological Standards Laboratory Tetracycline medicines, available in New Zealand, were sampled and tested. No major failings with respect to potency or microbial content were found.

The laboratory participated in the WHO international collaborative study of the proposed Second International Reference Preparation of Kanamycin.

Antimicrobial Susceptibility Laboratory Analysis of the results of a national survey of the antibiotic susceptibility of *Staphylococcus aureus* isolates was completed. The number of Methicillin and multiply-resistant staphylococci was very low.

Environmental Chemistry Laboratory During 1983, studies of environmental lead contamination included a feasibility study, for the Ministry of Energy, of proposals for a national survey of blood lead levels. The laboratory continued its national quality assurance programme for blood lead assays by sending samples of blood with a lead content to all laboratories involved in the clinical diagnosis of lead exposure. The objective of this programme was to promote methods development and analytical proficiency. The exposure of horticulturists to pesticides was monitored by measuring the cholinesterase enzyme activity in the blood of workers in the industry.

Environmental Dust Laboratory The Environmental Dust Laboratory experienced its busiest year since its establishment in 1977, as a result of a surge of interest in asbestos as a health hazard.

During the year 2477 bulk samples and 1700 air samples were analysed for asbestos, compared with 416 bulk and 809 air samples in 1982. Field investigations on the cutting and repair of asbestos cement water pipes were undertaken, and preliminary investigations into the asbestos content of serpentine fertiliser were carried out.

NATIONAL RADIATION LABORATORY

Laboratory Services In radiation protection survey visits to diagnostic X-ray facilities, particular attention has been given to operator protective barriers and to X-ray beam measurements. During 1983 extensive measurements on 567 X-ray tubes were made in 169 medical X-ray establishments. Work has continued on the radiation dosimetry of CT scanners with the development of more convenient ionisation chamber methods, and on the development of techniques for determining the performance of X-ray image intensifier-TV systems. Calibration and dosemeter intercomparison measurements were made in all departments and private practices where X-ray and cobalt machines are used for radiotherapy.

The number of people continuously monitored for radiation exposure by the laboratory's monitoring film service has remained at a little over 3000 in 377 establishments. A revised explanatory booklet for users of the service was issued during the year.

The laboratory's ability to conduct environmental chemistry investigations has been enhanced by the installation of an atomic absorption spectrophotometer. Gas chromatography measurements of organic solvent levels were made in surveys in 7 different industrial establishments. From January 1984 an environmental chemistry analysis service has been provided to district health offices in the South Island.

A wide range of inquiries on matters of public interest continued to be received. Concerns related to the disposal of small quantities of radioactive wastes in municipal rubbish tips, the consequences and arrangements in the event of an accident to nuclear-powered ships, hazards associated with nuclear power, French nuclear testing, and the consequences of, and civil defence measures against, nuclear warfare. A new concern was the level and effects of natural radioactivity emitted in stack discharges of a coal-fired power station. The laboratory continues to provide an advisory service for the design of radiation facilities and for the review of documents from various agencies.

Environmental Radioactivity The radioactive fallout monitoring programme measured only very low levels of long-lived fission products. Total beta activity in air and rain is monitored continuously at 4 New Zealand and 5 Pacific Island locations. Specific radionuclides measured are strontium-90 and lead-210 (naturally occurring) in rainwater (from 9 New Zealand and 2 Pacific locations), and strontium-90 and caesium-137 in milk (from 9 New Zealand locations). Concentrations in air and rain are now only very small fractions of those of naturally occurring radionuclides. In 1964, the year of peak strontium-90 deposition in New Zealand, the concentration of strontium-90 in rain exceeded that of lead-210 by a factor of 2.6, whereas now the strontium-90 annual deposition is about one fiftieth that of lead-210. No short-lived fission products have been detected by the laboratory network since underground testing began at Mururoa.

Routine harbour monitoring and departmental staff training were again conducted for the visits of nuclear-powered ships to New Zealand ports. No radioactivity attributable to the vessels was detected.

Mr H. R. Atkinson (leader) and Dr A. C. McEwan were members of an international team of 5 scientists who visited Mururoa Atoll and Tahiti during October-November 1983 to carry out an

assessment of the possible effects on South Pacific populations of the French nuclear testing programme at Mururoa. A report is in preparation. Following the visit, several examples of 9 different types of environmental samples which had been collected were analysed at the laboratory.

It has been widely recognised internationally that the greatest source of human radiation exposure, natural radiation, is comparatively the least investigated, and attention is currently being given particularly to measurements of radon levels. At the laboratory a "track etch" passive detector for radon monitoring is being developed utilising a locally available inexpensive polycarbonate sheeting. A series of measurements over periods of many months will be conducted to take account of seasonal variations.

Surveys of Patient Doses Twenty years ago a national survey was conducted of doses received by patients undergoing diagnostic X-ray examinations and the genetically significant dose to the population. Similar surveys of doses arising from radiopharmaceutical procedures were carried out in 1967 and 1973. Since then there have been a number of changes in medical practice, and annual orders for molybdenum-99, the parent of technetium-99m used in the great majority of ionising studies, have increased 6 fold. Malignancy significant or somatic doses have now also assumed greater importance than genetically significant dose. New surveys are currently being undertaken and the data collection phases of both the medical diagnostic X-ray and radiopharmaceutical procedures studies have now been largely completed.

A further study of both patient dose and image quality in mammographic examinations is in progress. This follows up earlier work by the laboratory which showed large variations in mammography techniques.

Industrial Radiography The number of large industrial development projects in the country has maintained a high level of industrial radiography. In addition to an annual safety training course for industrial radiographers at the laboratory, courses were provided in 1983 for the first time at both New Plymouth and Auckland, which are the principal centres for this activity. A total of 34 new licences for industrial radiography were issued.

Non-ionising Radiations In response to a variety of inquiries, attention was given to and guidance provided on "intrasonic" therapy equipment, eye protection against infrared radiation, ultraviolet hazards of electric arc welding, and risks associated with physiotherapy microwave use, radiofrequency dielectric heating and low frequency electromagnetic radiation from visual display units.

Retirement Mr H. Atkinson, Director, National Radiation Laboratory, retired in January 1984 after an extensive scientific and administrative career with the department. He has made a distinguished contribution to New Zealand's scientific services, as head of the National Radiation Laboratory, chairman of the management committee of the 3 departmental laboratories, chairman of the departmental and hospital scientific officers ratings committees, and scientific adviser to departmental divisions.

NATIONAL ENVIRONMENTAL CHEMISTRY AND ACOUSTICS LABORATORY

Accommodation The relocation of the National Environmental Chemistry and Acoustics Laboratory (NECAL) to 1 site, the former Dental Training School, Edenvale Road, Mt Eden, commenced during the year. By February 1984 the chemical laboratory, administration, engineering section, and air pollution section had moved out of the Environmental Laboratory premises. It is expected that the accommodation for all other sections at Edenvale Road will be completed by July 1984.

Chemical Services The main activity of this group continues to be to provide chemical support services to other departmental groups in the northern region.

In air pollution a regular programme of monitoring was maintained, with 3 general sites measuring smoke and sulphur dioxide and 4 measuring suspended particulate and lead in the Auckland area. An additional 10 monitors for particulate matter are operated in the vicinity of specific sources in the region.

A survey of carbon monoxide was carried out in Hamilton with the assistance, and at the request, of the Hamilton City Council. This was a repeat of surveys carried out in 1972 and 1977. Levels recorded were lower than in previous surveys, but this was attributed to the higher wind speeds that prevailed at the time of the survey.

In occupational health the laboratory provides services to district offices and to the Northern Regional Occupational Health Unit (NROHU). Samples were received from on-site tests in 35 premises, covering measurements of solvent vapours (13), styrene fumes (5), metal fumes or dusts (5), and a variety of other substances (inert dusts, acid and oil mists, ammonia, aldehydes, and polycyclic aromatic hydrocarbons). In addition, samples of material were received from a further 8 industries for assessment of potential occupational hazards. NROHU required analysis of 46 samples from tests for solvent vapours in air from a survey of printing processes.

A developing area of work for this group is in hazardous waste disposal. Laboratory and field investigations to establish appropriate

treatment processes which can be performed by waste producers and to illustrate final disposal options have commenced. Wastes being studied include sludges from petrol storage tanks and timber treatment plants. Refuse tip processes are also being studied as reports on overseas investigations indicate that many of the chemical wastes produced in this country can be properly disposed of by mixing with normal municipal refuse at suitable sites.

Engineering and Technical Services The main work of this section continues to be in support of the department's hearing conservation and deafness prevention activities. Audiological and acoustical equipment is calibrated for both public and private users.

Demand for routine calibrations increased by 12.5 percent during the year; 2229 units passed through the electronics laboratory. The introduction of an automated system for the calibration of sound level meters has allowed the processing of an increasing number of units and more complex equipment, within existing staff resources, while maintaining the standards required by the Testing Laboratory Registration Council (TELARC). An illustration of the advantages of this system is that calibration of a precision sound level meter to ISO standards can now be done in 2 hours, whereas previously it could take 1 person more than 3 days.

The more widespread use of the automatic brainstem response (ABR) technique by audiological services has also placed increasing demands on the section. In 1982 only 1 ABR instrument was operating in this country, whereas back-up calibration services are now required for 15.

During the year 59 models of hearing aids were tested and evaluated before being recommended for approval under Regulation 4, Social Security (Hospital Benefits—Outpatients) Regulations 1947. One model was not approved and 2 were returned to the agents to supply more technical data.

A survey was carried out on the numbers and types of hearing aids fitted by public clinics over a 7-month period. Findings were reported to the New Zealand Audiological Society's 1983 Conference, and a system of information feedback has been instituted which will further assist in ensuring that the approval system allows for the earliest availability of established improved technologies in hearing aids to users in this country.

NECAL continues to supply and maintain artificial larynges for users in this country. At March 1984 there were 149 users, and 57 new or replacement larynges were supplied during the year.

The system for evaluating and grading ear muffs and other hearing protection devices continues to operate satisfactorily; 18 models were evaluated during the year. Investigations continue into the appropriateness of the spectral composition of noise used as the

basis of the grading system. The objective is to identify whether the composition of industrial noise in the United States, which is used as the basis of the grading system, varies significantly from that in New Zealand.

In conjunction with the Audiology Branch, 10 new master speech tapes were produced during the year. These are being copied for distribution to all audiology clinics throughout the country.

The electronics laboratory also designed and constructed equipment for use in NECAL's studies on hazardous waste treatment and disposal.

The requirements for computer modelling of air pollution from proposed new large industries decreased this year, as fewer new industries progressed through the design stage, but other support work has been done in this area to meet specific requests. An attempt to model the Christchurch situation, with the aim of producing a validated predictive model which would both assist in air quality management in that area and allow for the reduction of resources currently being utilised in air pollution monitoring, has begun. A study has also commenced on the modelling of dense gas dispersion which would allow predictions of the extent of areas that could be affected by the inadvertent release of a toxic gas, such as from the rupturing of a pressurised chemical storage tank or in the operation of safety valves. Progress has also been made in modelling the dispersion of aerosols from the spray irrigation of waste-waters during sewage treatment. The spread of micro-organisms in these aerosols could constitute a public health risk, and modelling techniques are being used to enable a comparison of the downward effects of spray irrigation relative to conventional treatment plants.

The domestic fire testing facility has been used during the year to investigate the production of polycyclic aromatic hydrocarbons (PAHs) using various fuels and appliances. The emission of air pollutants during the burning of char made from West Coast coals was also assessed. At the request of the Clean Air Council, this facility is being altered to allow a comparison of the methods being used to approve appliances for use in clean air zones in this country with standard methods being used overseas. Considerable advice and assistance has been obtained from the National Coal Board Laboratories at Stoke Orchards in the United Kingdom, and it is expected that comparative testing will commence in 1984.

This laboratory has continued its training role by running the annual course for 11 students doing a Diploma in Air Pollution and this year a refresher course for field staff was held. Assistance was also given with courses on deafness detection and hearing conservation.

APPENDIX

STATISTICAL TABLES

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TABLE 1—Dental Service Statistics

SCHEDULE 1

SCHOOL DENTAL SERVICE

| | 1983-84 | 1982-83 |
|---|-----------|-----------|
| Number of school dental nurses* | 1 012 | 1 058 |
| Number of treatment centres (including sub-bases) | 1 433 | 1 434 |
| Number of schools | 2 568 | 2 581 |
| Number of children | 551 375 | 554 963 |
| Operative dental treatment†— | | |
| Total number of fillings | 832 891 | 844 728 |
| Number of carious permanent teeth extracted | 59 | 38 |
| Number of carious deciduous teeth extracted | 23 508 | 25 543 |
| Total number of operations | 3 960 338 | 4 106 488 |

*The number of school dental nurses is the number working as at 31 March converted to full-time equivalents.
†For year ended 31 December.

SCHEDULE 2

GENERAL DENTAL BENEFITS FOR TEENAGERS

| | 1983-84 | 1982-83 |
|--|-------------|-------------|
| Number of patients enrolled for general dental benefits as at 31 March | 294 323 | 267 646 |
| Total amount paid private practitioners for treatment rendered under general dental benefits | \$7,002,888 | \$7,384,685 |
| Number of completed treatments in respect of which the above sum was paid | 374 368 | 378 306 |
| Average cost per completed treatment for general dental benefits | \$18.70 | \$19.70 |

SCHEDULE 3

TREATMENT OF PRE-SCHOOL CHILDREN (2½ TO 5 YEARS OF AGE)

| Year Ended 31 March | Number of Pre-school Children Treated | Approximate Percentage of Pre-school Children |
|---------------------|--|--|
| 1950 | 22 514 | 19 |
| 1955 | 44 976 | 35 |
| 1960 | 63 012 | 44 |
| 1965 | 82 690 | 53 |
| 1970 | 87 197 | 60 |
| 1975 | 99 963 | 64 |
| 1980 | 87 791 | 66 |
| 1981 | 85 596 | 68 |
| 1982 | 85 319 | 68 |
| 1983 | 87 953 | 71 |
| 1984 | 93 209 | 74 |

TABLE 2

HOSPITAL BOARDS CAPITAL WORKS LOAN EXPENDITURE AT 31 MARCH 1984

| <i>Estimated Expenditure 1983-84</i> | <i>Building Construction and Associated Work</i> | <i>Consultants Fees</i> | <i>Land Purchase</i> | <i>Other</i> | <i>Total Expenditure 1983-84</i> | <i>Total Expenditure 1982-83</i> |
|--|--|-----------------------------|----------------------|--------------|--|--|
| (\$000) | (\$000) | (\$000) | (\$000) | (\$000) | (\$000) | (\$000) |
| 44,180 | 32,954 | 4,343 | ... | 1,550 | 38,847 | 45, 560 |

Expenditure for 1983-84 on furniture and equipment was \$10,768,399.

TABLE 3

INFANT, NEONATAL, POST-NEONATAL, AND LATE FETAL MORTALITY BY RACE 1973-82

| Year | Infants (Deaths Under 1 Year) | | | Neonates (Deaths Under 28 Days) | | | Post-neonates (Deaths 28 Days and Under 1 Year) | | | Late Fetal Deaths (Stillbirths) | | |
|------|----------------------------------|-----------|-------|------------------------------------|-----------|-------|--|-----------|-------|------------------------------------|-----------|-------|
| | Total | | Maori | Total | | Maori | Total | | Maori | Total | | Maori |
| | Population | Non-Maori | | Population | Non-Maori | | Population | Non-Maori | | Population | Non-Maori | |
| 1973 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 1974 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 1975 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 1976 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 1977 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 1978 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 1979 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 1980 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 1981 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 1982 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 1973 | 984 | 837 | 147 | 594 | 527 | 67 | 390 | 310 | 80 | 551 | 489 | 62 |
| 1974 | 925 | 773 | 152 | 559 | 476 | 83 | 366 | 297 | 69 | 504 | 436 | 68 |
| 1975 | 907 | 768 | 139 | 550 | 474 | 76 | 357 | 294 | 63 | 471 | 423 | 48 |
| 1976 | 774 | 628 | 146 | 436 | 365 | 71 | 338 | 263 | 75 | 427 | 381 | 46 |
| 1977 | 770 | 618 | 152 | 433 | 358 | 75 | 337 | 260 | 77 | 416 | 369 | 47 |
| 1978 | 703 | 585 | 118 | 377 | 318 | 59 | 326 | 267 | 59 | 362 | 318 | 44 |
| 1979 | 670 | 548 | 122 | 360 | 300 | 60 | 310 | 248 | 62 | 347 | 303 | 44 |
| 1980 | 657 | 529 | 128 | 302 | 260 | 42 | 355 | 269 | 86 | 366 | 313 | 53 |
| 1981 | 599 | 498 | 101 | 291 | 250 | 41 | 308 | 248 | 60 | 313 | 269 | 44 |
| 1982 | 598 | 480 | 118 | 274 | 229 | 45 | 324 | 251 | 73 | 303 | 264 | 39 |
| 1973 | 16.2 | 15.7 | 19.9 | 9.8 | 9.9 | 9.1 | 6.4 | 5.8 | 10.8 | 9.0 | 9.1 | 8.3 |
| 1974 | 15.6 | 14.8 | 21.8 | 9.4 | 9.1 | 11.9 | 6.2 | 5.7 | 9.9 | 8.4 | 8.3 | 9.6 |
| 1975 | 16.0 | 15.4 | 20.5 | 9.7 | 9.5 | 11.2 | 6.3 | 5.9 | 9.3 | 8.2 | 8.4 | 7.0 |
| 1976 | 14.0 | 13.0 | 22.0 | 7.9 | 7.5 | 10.7 | 6.1 | 5.4 | 11.3 | 7.7 | 7.8 | 6.9 |
| 1977 | 14.2 | 13.0 | 22.4 | 8.0 | 7.6 | 11.1 | 6.2 | 5.5 | 11.3 | 7.6 | 7.7 | 6.9 |
| 1978 | 13.8 | 13.2 | 17.9 | 7.4 | 7.2 | 9.0 | 6.4 | 6.0 | 9.0 | 7.0 | 7.1 | 6.6 |
| 1979 | 12.8 | 12.0 | 18.3 | 6.9 | 6.6 | 9.0 | 5.9 | 5.4 | 9.3 | 6.6 | 6.6 | 6.6 |
| 1980 | 13.0 | 12.0 | 19.9 | 6.0 | 5.9 | 6.5 | 7.0 | 6.1 | 13.4 | 7.2 | 7.0 | 8.2 |
| 1981 | 11.8 | 11.3 | 15.3 | 5.7 | 5.7 | 6.2 | 6.1 | 5.6 | 9.1 | 6.1 | 6.1 | 6.6 |
| 1982 | 12.0 | 11.0 | 19.0 | 5.5 | 5.2 | 7.2 | 6.5 | 5.7 | 11.7 | 6.0 | 6.0 | 6.2 |

*Per 1000 live births for infant, neonatal, and post-neonatal deaths and per 1000 total births for stillbirths. The figures shown above are the latest available.

National Health Statistics Centre, Wellington

TABLE 4
DEATHS OF INFANTS UNDER 1 YEAR BY RACE 1981 AND 1982

| Principal Causes of Death | Race | Number of Deaths | | Rates Per 1000 Live Births | |
|---|-----------|------------------|------|----------------------------|------|
| | | 1981 | 1982 | 1981 | 1982 |
| All infant deaths under 1 year .. | Total | 599 | 598 | 11.8 | 12.0 |
| | Non-Maori | 498 | 480 | 11.3 | 11.0 |
| | Maori | 101 | 118 | 15.3 | 19.0 |
| Intestinal infectious diseases .. | Total | 1 | 4 | -- | 0.1 |
| | Non-Maori | 1 | 2 | -- | -- |
| | Maori | -- | 2 | -- | 0.3 |
| Other infectious and parasitic diseases .. | Total | 5 | 7 | 0.1 | 0.1 |
| | Non-Maori | 3 | 6 | 0.1 | 0.1 |
| | Maori | 2 | 1 | 0.3 | 0.2 |
| Malignant neoplasms .. | Total | 3 | 1 | 0.1 | -- |
| | Non-Maori | 3 | 1 | 0.1 | -- |
| | Maori | -- | -- | -- | -- |
| Diseases of the nervous system .. | Total | 9 | 21 | 0.2 | 0.4 |
| | Non-Maori | 5 | 16 | 0.1 | 0.4 |
| | Maori | 4 | 5 | 0.6 | 0.8 |
| Diseases of the circulatory system .. | Total | 4 | 7 | 0.1 | 0.1 |
| | Non-Maori | 4 | 3 | 0.1 | 0.1 |
| | Maori | -- | 4 | -- | 0.6 |
| Acute bronchitis, bronchiolitis, and pneumonia .. | Total | 25 | 36 | 0.5 | 0.7 |
| | Non-Maori | 22 | 27 | 0.5 | 0.6 |
| | Maori | 3 | 9 | 0.5 | 1.4 |
| Other diseases of the respiratory system .. | Total | 8 | 13 | 0.2 | 0.3 |
| | Non-Maori | 4 | 9 | 0.1 | 0.2 |
| | Maori | 4 | 4 | 0.6 | 0.6 |
| Diseases of the digestive system .. | Total | 4 | 3 | 0.1 | 0.1 |
| | Non-Maori | 3 | 1 | 0.1 | -- |
| | Maori | 1 | 2 | 0.2 | 0.3 |
| Congenital anomalies .. | Total | 139 | 143 | 2.7 | 2.9 |
| | Non-Maori | 127 | 124 | 2.9 | 2.8 |
| | Maori | 12 | 19 | 1.8 | 3.1 |
| Perinatal causes— | | | | | |
| Disorders relating to short gestation and unspecified low birth weight .. | Total | 29 | 23 | 0.6 | 0.5 |
| | Non-Maori | 23 | 13 | 0.5 | 0.3 |
| | Maori | 6 | 10 | 0.9 | 1.6 |
| Birth trauma .. | Total | 11 | 7 | 0.2 | 0.1 |
| | Non-Maori | 7 | 7 | 0.2 | 0.2 |
| | Maori | 4 | -- | 0.6 | -- |
| Intrauterine hypoxia and birth asphyxia ... | Total | 6 | 12 | 0.1 | 0.2 |
| | Non-Maori | 6 | 10 | 0.1 | 0.2 |
| | Maori | -- | 2 | -- | 0.3 |
| Respiratory distress syndrome .. | Total | 43 | 47 | 0.8 | 0.9 |
| | Non-Maori | 36 | 40 | 0.8 | 0.9 |
| | Maori | 7 | 7 | 1.1 | 1.1 |
| Other respiratory conditions of fetus and newborn .. | Total | 48 | 35 | 0.9 | 0.7 |
| | Non-Maori | 42 | 31 | 1.0 | 0.7 |
| | Maori | 6 | 4 | 0.9 | 0.6 |
| Fetal and neonatal haemorrhage .. | Total | 14 | 13 | 0.3 | 0.3 |
| | Non-Maori | 14 | 10 | 0.3 | 0.2 |
| | Maori | -- | 3 | -- | 0.5 |
| Other perinatal causes .. | Total | 17 | 16 | 0.3 | 0.3 |
| | Non-Maori | 13 | 14 | 0.3 | 0.3 |
| | Maori | 4 | 2 | 0.6 | 0.3 |
| Sudden death, cause unknown (sudden infant death syndrome) .. | Total | 208 | 189 | 4.1 | 3.8 |
| | Non-Maori | 168 | 149 | 3.8 | 3.4 |
| | Maori | 40 | 40 | 6.1 | 6.4 |
| Accidents, poisonings, and violence (external causes) .. | Total | 19 | 13 | 0.4 | 0.3 |
| | Non-Maori | 11 | 10 | 0.2 | 0.2 |
| | Maori | 8 | 3 | 1.2 | 0.5 |
| Remainder (all other causes) .. | Total | 6 | 8 | 0.1 | 0.2 |
| | Non-Maori | 6 | 7 | 0.1 | 0.2 |
| | Maori | -- | 1 | -- | 0.2 |

--Less than 0.1

TABLE 5

SELECTED CAUSES OF DEATH: NUMBERS AND RATES 1955-81

| Disease Groups | Number of Deaths Registered | | | | | 1981 | Mean Annual Rates per 100 000 Population | | | | | | 1981 |
|---|-----------------------------|---------|---------|---------|---------|--------|--|---------|---------|---------|---------|-------|------|
| | 1955-59 | 1960-64 | 1965-69 | 1970-74 | 1975-78 | | 1955-59 | 1960-64 | 1965-69 | 1970-74 | 1975-78 | | |
| Tuberculosis | 1 123 | 572 | 479 | 430 | 266 | 49 | 10.0 | 4.6 | 3.5 | 2.9 | 2.1 | 1.6 | |
| All other infectious and parasitic diseases | 930 | 636 | 613 | 773 | 538 | 106 | 8.3 | 5.2 | 4.5 | 5.3 | 4.3 | 3.4 | |
| Malignant neoplasm of bronchus, lung, and trachea | 1 938 | 2 484 | 3 263 | 4 303 | 4 124 | 1 187 | 17.3 | 20.0 | 24.0 | 29.4 | 33.1 | 37.6 | |
| Other malignant neoplasms | 14 237 | 15 370 | 16 473 | 18 843 | 16 489 | 4 401 | 127.4 | 123.6 | 121.1 | 128.9 | 132.3 | 139.4 | |
| Diabetes mellitus | 1 257 | 1 478 | 1 650 | 2 139 | 1 706 | 388 | 11.2 | 11.9 | 12.1 | 14.6 | 13.7 | 12.3 | |
| Cerebrovascular disease | 12 336 | 13 536 | 14 947 | 16 941 | 12 466 | 2 920 | 110.4 | 108.9 | 109.9 | 115.8 | 100.0 | 92.5 | |
| Active rheumatic fever and chronic rheumatic heart disease* | 1 286 | 1 161 | 1 022 | 881 | 768 | 130 | 11.5 | 9.3 | 7.5 | 6.0 | 6.2 | 4.1 | |
| Other forms of heart disease and hypertension* | 33 746 | 37 733 | 41 459 | 41 022 | 33 322 | 8 476 | 302.0 | 303.5 | 304.8 | 280.5 | 267.4 | 268.5 | |
| Influenza | 525 | 444 | 181 | 393 | 337 | 40 | 4.7 | 3.6 | 1.3 | 2.7 | 2.7 | 1.3 | |
| Pneumonia | 4 191 | 5 773 | 6 192 | 5 395 | 3 880 | 917 | 37.5 | 46.4 | 45.5 | 36.9 | 31.1 | 29.0 | |
| Bronchitis* | 2 344 | 3 034 | 3 744 | 4 366 | 3 793 | 365 | 21.0 | 24.4 | 27.5 | 29.9 | 30.4 | 11.6 | |
| Asthma* | 770 | 580 | 739 | 600 | 585 | 246 | 6.9 | 4.7 | 5.4 | 4.1 | 4.7 | 7.8 | |
| Ulcer of stomach and duodenum | 909 | 761 | 627 | 678 | 579 | 145 | 8.1 | 6.1 | 4.6 | 4.6 | 4.6 | 4.6 | |
| Diseases of liver and gall bladder | 905 | 782 | 776 | 997 | 931 | 196 | 8.1 | 6.3 | 5.7 | 6.8 | 7.5 | 6.2 | |
| Nephritis and nephrosis* | 746 | 685 | 629 | 595 | 474 | 49 | 6.7 | 5.5 | 4.6 | 4.1 | 3.8 | 1.6 | |
| Hyperplasia of prostate | 736 | 546 | 375 | 291 | 153 | 22 | 6.6 | 4.4 | 2.8 | 2.0 | 1.2 | 0.7 | |
| Congenital anomalies | 1 549 | 1 687 | 1 570 | 1 604 | 1 182 | 212 | 13.9 | 13.6 | 11.5 | 11.0 | 9.5 | 6.7 | |
| Motor vehicle accidents | 1 872 | 2 046 | 2 868 | 3 609 | 2 929 | 707 | 16.8 | 16.4 | 21.1 | 24.7 | 23.5 | 22.4 | |
| Suicide and self-inflicted injury | 1 025 | 1 092 | 1 305 | 1 304 | 1 271 | 320 | 9.2 | 8.8 | 9.6 | 8.9 | 10.2 | 10.1 | |
| Homicide | 94 | 116 | 137 | 158 | 177 | 42 | 0.8 | 0.9 | 1.0 | 1.1 | 1.4 | 1.3 | |
| Other accidental and violent deaths | 3 361 | 3 700 | 4 207 | 4 791 | 3 732 | 756 | 30.1 | 29.8 | 30.9 | 32.8 | 30.0 | 23.9 | |
| All other causes | 15 332 | 15 816 | 15 130 | 14 373 | 11 507 | 3 473 | 137.2 | 127.2 | 111.2 | 98.3 | 92.3 | 110.0 | |
| Totals, all causes | 101 212 | 110 032 | 118 386 | 124 486 | 101 209 | 25 147 | 905.7 | 884.9 | 870.5 | 851.3 | 812.3 | 796.5 | |

*1981 data not comparable with previous years shown due to introduction of Ninth Revision of WHO ICD in 1979

TABLE 6

HEALTH BENEFITS: STATEMENT SHOWING DEPARTMENTAL EXPENDITURE SINCE 1 APRIL 1974

| | 1974-75 | 1975-76 | 1976-77 | 1977-78 | 1978-79 | 1979-80 | 1980-81 | 1981-82 | 1982-83 | 1983-84 |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| Subdivision I—Maternity Benefits | | | | | | | | | | |
| Medical practitioners' fees | 4,832,370 | 5,147,654 | 4,866,034 | 4,891,567 | 5,952,150 | 6,832,157 | 7,800,447 | 9,330,802 | 10,565,404 | 10,554,019 |
| Medical practitioners' motor vehicle allowance | 145,174 | 152,219 | 138,709 | 156,465 | 198,068 | 204,767 | 257,627 | 317,125 | 365,350 | 386,331 |
| Obstetric nurses' fees | 3,613 | 8,547 | 17,467 | 18,508 | 32,682 | 40,466 | 69,282 | 86,830 | 83,797 | 57,326 |
| Obstetric nurses' motor vehicle allowance* | ... | ... | ... | ... | ... | ... | ... | 13,076 | 57,650 | 54,621 |
| Total | 4,981,157 | 5,308,420 | 5,022,210 | 5,066,540 | 6,182,900 | 7,077,390 | 8,127,356 | 9,747,833 | 11,072,201 | 11,052,297 |
| Subdivision II—Medical Benefits | | | | | | | | | | |
| General medical services | 19,902,815 | 28,180,510 | 28,394,391 | 29,448,833 | 35,797,984 | 34,950,123 | 35,486,912 | 35,260,857 | 35,777,769 | 34,552,495 |
| GMS motor vehicle allowance | 127,768 | 125,025 | 117,810 | 124,281 | 199,582 | 188,224 | 198,957 | 196,908 | 192,615 | 189,211 |
| Specialist medical services | 2,252,908 | 2,634,684 | 2,667,855 | 3,007,893 | 4,359,921 | 4,415,627 | 4,626,487 | 4,464,306 | 4,628,808 | 4,676,177 |
| Rural practice bonus and other incentives | 425,077 | 586,702 | 594,527 | 606,105 | 764,359 | 739,474 | 741,035 | 755,063 | 763,811 | 800,759 |
| Immunisation benefit | 433,083 | 456,748 | 495,797 | 540,378 | 646,700 | 577,240 | 475,806 | 671,369 | 863,578 | 853,252 |
| Practice nurse subsidy | 268,486 | 649,189 | 1,257,041 | 2,256,638 | 4,183,036 | 5,985,363 | 7,978,975 | 10,667,289 | 12,614,504 | ... |
| Social workers in general practice | ... | ... | ... | 1,795 | 24,923 | 34,090 | ... | ... | ... | ... |
| Subtotal | 23,410,137 | 32,632,858 | 33,527,421 | 35,985,923 | 45,976,505 | 46,890,141 | 49,508,172 | 52,015,792 | 54,841,085 | ... |
| Private practice and postgraduate grants | 37,691 | 20,716 | 39,746 | 31,798 | 59,421 | 55,012 | 64,323 | 65,363 | 60,412 | ... |
| Total | 23,608,966 | 32,805,867 | 33,696,896 | 36,215,440 | 46,191,703 | 47,093,801 | 49,580,528 | 52,081,155 | 54,901,497 | 41,071,894 |
| Subdivision III—Hospital Benefits | | | | | | | | | | |
| Treatment in private hospitals | 367,832 | 336,366 | 350,854 | 281,073 | 258,483 | 208,641 | 198,532 | 203,620 | 187,680 | 165,307 |
| Maternity benefits | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Medical benefit | 6,708,126 | 3,260,603 | 4,119,593 | 3,934,581 | 3,735,339 | 4,099,681 | 4,450,817 | 5,168,770 | 5,955,992 | 616,865 |
| Surgical benefit | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Geriatric benefit | 2,383,557 | 8,589,276 | 11,728,319 | 12,599,233 | 13,657,462 | 20,178,214 | 24,585,067 | 30,840,015 | 35,219,428 | 5,565,044 |
| Long stay benefit | ... | ... | ... | ... | 216,247 | 448,955 | 515,974 | 697,464 | 591,067 | 36,337,388 |
| Treatment in approved institutions | 687,418 | 824,979 | 1,199,016 | 1,281,727 | 1,208,760 | 1,790,560 | 2,327,256 | 2,897,971 | 3,203,346 | 597,860 |
| Total | 10,146,932 | 13,011,224 | 17,397,782 | 18,096,614 | 19,076,291 | 26,726,051 | 32,077,646 | 39,807,840 | 45,157,513 | 3,170,822 |
| | | | | | | | | | | 46,453,286 |

*Up to 1981-82 this allowance was included under obstetric nurses fees.

†Now included under Medical Subsidies.

‡Now funded from hospital board allocation.

\$Now discontinued.

||Benefit introduced 1 July 1978.

TABLE 6

HEALTH BENEFITS: STATEMENT SHOWING DEPARTMENTAL EXPENDITURE SINCE 1 APRIL 1974 —continued

| | 1974-75 | 1975-76 | 1976-77 | 1977-78 | 1978-79 | 1979-80 | 1980-81 | 1981-82 | 1982-83 | 1983-84 |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| Subdivision IV—Pharmaceutical Benefits | | | | | | | | | | |
| Medicines ordered by: | | | | | | | | | | |
| Medical practitioners— | | | | | | | | | | |
| Prescriptions and practitioners' supply orders | ... | ... | ... | ... | ... | ... | ... | ... | ... | 214,718,514 |
| Others | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1,646,685 |
| Dentists— | | | | | | | | | | |
| Prescriptions and practitioners' supply orders | ... | ... | ... | ... | ... | ... | ... | ... | ... | 684,674 |
| Other | ... | ... | ... | ... | ... | ... | ... | ... | ... | 57,097 |
| Private hospitals and other institutions— | | | | | | | | | | |
| Bulk supply orders | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2,579,450 |
| Other | ... | ... | ... | ... | ... | ... | ... | ... | ... | 957,587 |
| Total | ... | ... | ... | ... | ... | ... | ... | ... | ... | 220,644,007 |
| Subdivision V—Supplementary Benefits | | | | | | | | | | |
| Dental services | 4,403,928 | 5,334,451 | 5,157,617 | 5,315,840 | 6,359,566 | 6,082,132 | 7,845,734 | 8,187,845 | 8,330,731 | 7,982,993 |
| Laboratory services | 9,168,642 | 10,727,405 | 12,136,237 | 13,483,307 | 17,105,714 | 18,438,081 | 23,315,296 | 25,676,543 | 27,933,335 | 29,256,379 |
| Artificial aids | 34,674 | 37,088 | 76,343 | 64,972 | 83,084 | 105,052 | 132,841 | 168,403 | 210,700 | 248,340 |
| Physiotherapy services | 612,860 | 1,000,643 | 1,238,276 | 1,347,038 | 1,530,288 | 1,501,885 | 1,580,005 | 1,659,358 | 2,011,163 | 2,053,361 |
| Radiological services | 1,599,640 | 1,705,872 | 1,752,413 | 1,810,478 | 1,894,278 | 2,112,426 | 2,077,473 | 2,134,779 | 2,511,777 | 2,941,930 |
| Specialist services (neurosurgery) | 403 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Breast prostheses | ... | ... | 7,409 | 20,197 | 22,657 | 19,367 | 18,651 | 54,669 | 108,486 | 169,072 |
| Hair pieces* | ... | ... | ... | ... | 30,689 | 48,300 | 50,313 | 55,653 | 63,943 | 58,945 |
| Total | 15,820,147 | 18,805,459 | 20,368,295 | 22,041,832 | 27,026,276 | 28,307,243 | 35,020,313 | 37,937,250 | 41,170,135 | 42,711,020 |

*Benefit introduced 1 June 1978.

TABLE 6
HEALTH BENEFITS: STATEMENT SHOWING DEPARTMENTAL EXPENDITURE SINCE 1 APRIL 1974—continued

| | 1974-75 | 1975-76 | 1976-77 | 1977-78 | 1978-79 | 1979-80 | 1980-81 | 1981-82 | 1982-83 | 1983-84 |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| Practice nurse† | ... | ... | ... | ... | ... | ... | ... | ... | ... | 13,368,035 |
| Special sessional schemet | ... | ... | ... | ... | ... | ... | ... | ... | ... | 67,007 |
| Health centres—practice nurses\$ and managers † | ... | ... | ... | ... | ... | ... | ... | ... | ... | 739,506 |
| Total | ... | ... | ... | ... | ... | ... | ... | ... | ... | 14,174,548 |
| Subdivision VI—Medical Subsidies | | | | | | | | | | |
| Private geniatric hospital† | ... | ... | ... | ... | ... | ... | ... | ... | ... | 654,770 |
| Ashburn Hall† | ... | ... | ... | ... | ... | ... | ... | ... | ... | 131,192 |
| Industrial medical officer† | ... | ... | ... | ... | ... | ... | ... | ... | ... | 259,281 |
| Services to 'universities, teachers' training colleges, technical institutes, etc.† | ... | ... | ... | ... | ... | ... | ... | ... | ... | 208,680 |
| Total | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1,253,923 |
| Grand totals | \$111,036,565 | \$139,797,721 | \$161,336,150 | \$179,133,847 | \$211,926,482 | \$242,001,658 | \$272,083,586 | \$313,641,841 | \$348,399,158 | \$377,360,975 |

†Up to 1982-83, expenditure included in "general medical services" under Medical Benefits.
‡Up to 1982-83, expenditure included under Medical Benefits.
§Before 1 April 1983, subsidy for practice nurses in health centres funded from hospital board allocation.

TABLE 7

MENTAL HEALTH DATA 1982 AND 1983: BY HOSPITAL TYPE*

| Average Numbers Resident | | | | | | 1982 | 1983 |
|---|----|----|----|----|----|-------|-------|
| Psychiatric hospitals | .. | .. | .. | .. | .. | 5 258 | 5 108 |
| Intellectual handicap hospitals | .. | .. | .. | .. | .. | 1 871 | 1 819 |
| Subtotal | .. | .. | .. | .. | .. | 7 129 | 6 927 |
| Psychiatric units of public hospitals | .. | .. | .. | .. | .. | 279 | 296 |
| Totals | .. | .. | .. | .. | .. | 7 408 | 7 223 |

| Admission† | 1982 | | | 1983‡ | | |
|--|-------|--------|-------|-------|--------|-------|
| | Male | Female | Total | Male | Female | Total |
| Psychiatric hospitals— | | | | | | |
| First admissions | 1 964 | 1 439 | 3 403 | 1 494 | 1 174 | 2 668 |
| Re-admissions | 3 339 | 2 726 | 6 065 | 2 735 | 2 341 | 5 076 |
| All admissions | 5 303 | 4 165 | 9 468 | 4 229 | 3 515 | 7 744 |
| Intellectual handicap hospitals— | | | | | | |
| First admissions | 57 | 42 | 99 | 39 | 32 | 71 |
| Re-admissions | 310 | 146 | 456 | 251 | 124 | 375 |
| All admissions | 367 | 188 | 555 | 290 | 156 | 446 |
| Psychiatric units of public hospitals— | | | | | | |
| First admissions | 514 | 886 | 1 400 | 599 | 906 | 1 505 |
| Re-admissions | 825 | 1 485 | 2 310 | 918 | 1 576 | 2 494 |
| All admissions | 1 339 | 2 371 | 3 710 | 1 517 | 2 482 | 3 999 |

| Discharges§ | 1982 | | | 1983‡ | | |
|---|-------|--------|-------|-------|--------|-------|
| | Male | Female | Total | Male | Female | Total |
| Psychiatric hospitals— | | | | | | |
| Outright discharges | 3 382 | 2 916 | 6 298 | 3 367 | 2 864 | 6231 |
| Discharged on leave | 2 370 | 1 625 | 3 995 | 1 546 | 1 190 | 2 736 |
| Not committed¶ | 206 | 42 | 248 | 196 | 36 | 232 |
| Died in hospital | 222 | 155 | 377 | 204 | 170 | 374 |
| Discharged from/died while on leave | 362 | 268 | 630 | 149 | 112 | 261 |
| Intellectual handicap hospitals— | | | | | | |
| Outright discharges | 347 | 131 | 528 | 322 | 160 | 482 |
| Discharged on leave | 30 | 20 | 50 | 13 | 8 | 21 |
| Died in hospital | 12 | 9 | 21 | 16 | 10 | 26 |
| Discharged from/died while on leave | 9 | 4 | 13 | — | 1 | 1 |
| Psychiatric units of public hospitals— | | | | | | |
| Outright discharges | 1 342 | 2 351 | 3 693 | 1 591 | 2 654 | 4 245 |
| Died in hospital | 1 | 8 | 9 | 2 | 4 | 6 |

*Table includes, for the first time, psychiatric units of public hospitals. Psychopaedic hospitals are now referred to as intellectual handicap hospitals; figures remain comparable with previous years. Figures in this table do not include institutions licensed under the Alcoholism and Drug Addiction Act 1966.

†Excludes formal patients readmitted from leave.

‡Provisional figures.

§Previously known as "deregistrations"; figures remain comparable with previous years.

|| Left hospital on leave, but still officially patients.

¶Patients remanded for psychiatric assessment but not admitted.

In 1983 the average occupied bed rate for psychiatric and intellectual handicap hospitals was 2.1 per thousand population (2.2 the previous year).

When Alcoholism and Drug Addiction Act institutions are included in the total numbers for 1983, the percentage of formal admissions (people who may not discharge themselves) is approximately 18 percent.

Admissions for Alcoholism 1983 The provisional total of first and readmissions (excluding patients readmitted from leave) for all forms of alcoholism in 1983 was 2870 cases. Three hundred and eighteen (11 percent) of these admissions were reported as being under the Alcoholism and Drug Addiction Act*. One hundred and seventy seven of these people applied for treatment themselves, and the remaining 141 patients had other people make the applications on their behalves.

*Figures for separate institutions are available from the department on request.

TABLE 8
NUMBER OF NOTIFIED CASES OF POISONINGS TREATED IN HOSPITALS DURING 1983

| District | 0-1 Year | | | | | | 2-4 Years | | | | | | 5-9 Years | | | | | | 10-14 Years | | | | | | 15-24 Years | | | | | | 25-54 Years | | | | | | 55 Years and Over And Age Not Known | | | | | | Total | | | | | | |
|---------------------|----------|-------|-----|-------|-------|-------|-----------|---------|------|------|-------|------|-----------|-------|-------|---------|-------|-------|-------------|---------|------|-------|-------|-------|-------------|-------|-------|-------|-------|-------|-------------|-------|-------|-------|-------|-------|---|-------|-------|-------|-------|---------|-------|-----|--|--|---|--|--|
| | M | | | F | | | NK* | | | T | | | M | | | F | | | NK* | | | T | | | M | | | F | | | NK* | | | T | | | M | | | F | | | | NK* | | | T | | |
| | M | F | NK* | T | M | F | NK* | T | M | F | NK* | T | M | F | NK* | T | M | F | NK* | T | M | F | NK* | T | M | F | NK* | T | M | F | NK* | T | M | F | NK* | T | | | | | | | | | | | | | |
| Whangarei | 6 | 6 | - | 12 | 14 | 9 | - | 23 | - | - | - | 2 | 2 | - | - | - | 4 | 6 | 10 | 8 | 5 | - | 13 | - | 2 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | 2 | 2 | 62 | | | | | | | | |
| Takapuna | 34 | 20 | - | 54 | 56 | 45 | 1 | 102 | - | - | - | 5 | 5 | 1 | 1 | 6 | 48 | 89 | 137 | 28 | 85 | - | 113 | 9 | 17 | 26 | - | - | - | - | - | - | - | - | - | - | - | - | - | 26 | 464 | | | | | | | | |
| Auckland | 31 | 19 | - | 50 | 39 | 38 | - | 77 | - | - | - | 9 | 9 | 5 | 6 | 25 | 110 | 137 | 247 | 113 | 136 | - | 249 | 22 | 32 | 54 | - | - | - | - | - | - | - | - | - | - | - | - | - | 54 | 708 | | | | | | | | |
| South Auckland | 47 | 40 | - | 87 | 57 | 53 | - | 110 | - | - | - | 11 | 11 | 7 | 11 | 32 | 66 | 121 | 187 | 53 | 82 | - | 135 | 5 | 9 | 14 | - | - | - | - | - | - | - | - | - | - | - | - | - | 14 | 576 | | | | | | | | |
| Hamilton.. | 16 | 18 | - | 34 | 65 | 57 | 2 | 124 | 3 | 36 | 2 | 6 | 5 | 4 | 9 | 10 | 18 | 41 | 59 | 14 | 46 | - | 60 | 1 | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | 7 | 303 | | | | | | | | |
| Rotorua .. | 14 | 8 | - | 22 | 19 | 14 | 3 | 36 | 1 | 1 | 3 | 1 | - | - | 4 | 4 | 17 | 21 | 38 | 19 | 12 | 2 | 33 | 4 | 2 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | 141 | | | | | | | | |
| Gisborne.. | 12 | 7 | - | 19 | 21 | 13 | - | 34 | 1 | - | - | 2 | 2 | - | 5 | 7 | 16 | 26 | 42 | 12 | 12 | - | 24 | 1 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 | 131 | | | | | | | | |
| Napier .. | 31 | 22 | - | 53 | 41 | 20 | - | 61 | - | - | - | 2 | 2 | 1 | 10 | 10 | 27 | 30 | 57 | 20 | 23 | - | 43 | 4 | 6 | 10 | - | - | - | - | - | - | - | - | - | - | - | - | - | 10 | 235 | | | | | | | | |
| New Plymouth | 19 | 11 | - | 30 | 23 | 16 | - | 39 | 1 | - | - | 3 | 3 | 1 | 7 | 7 | 33 | 21 | 54 | 12 | 18 | - | 30 | 4 | 3 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | 7 | 169 | | | | | | | | |
| Wanganui | 4 | 5 | - | 9 | 14 | 4 | - | 18 | 1 | 1 | - | 1 | - | - | 5 | 5 | 9 | 20 | 29 | 10 | 16 | - | 26 | 3 | 4 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | 7 | 96 | | | | | | | | |
| Palmerston North | 14 | 8 | - | 22 | 23 | 14 | - | 37 | 2 | 1 | - | 2 | 1 | 1 | 3 | 4 | 39 | 51 | 90 | 25 | 49 | - | 74 | 6 | 4 | 10 | - | - | - | - | - | - | - | - | - | - | - | - | - | 10 | 240 | | | | | | | | |
| Wellington | 21 | 13 | - | 34 | 25 | 18 | - | 43 | 2 | 3 | - | 2 | 2 | 2 | 11 | 13 | 51 | 76 | 127 | 53 | 80 | - | 133 | 8 | 15 | 23 | - | - | - | - | - | - | - | - | - | - | - | - | - | 23 | 378 | | | | | | | | |
| Lower Hutt | 20 | 10 | - | 30 | 34 | 24 | - | 58 | 4 | 1 | - | 4 | 1 | 1 | 7 | 8 | 43 | 51 | 94 | 37 | 34 | - | 71 | 2 | 4 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | 272 | | | | | | | | |
| Nelson .. | 11 | 7 | - | 18 | 24 | 13 | - | 37 | 2 | 1 | - | 2 | - | - | 1 | 1 | 9 | 19 | 28 | 12 | 10 | - | 22 | 1 | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | 3 | 112 | | | | | | | | |
| Christchurch | 78 | 63 | 1 | 142 | 159 | 109 | - | 268 | 13 | 9 | - | 19 | 19 | 37 | 56 | 177 | 224 | 401 | 120 | 172 | - | 292 | 21 | 30 | 51 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 51 | 1232 | | | | | | | | |
| Timaru .. | 11 | 8 | - | 19 | 15 | 11 | - | 26 | 2 | - | - | 1 | 1 | - | 1 | 1 | 1 | 1 | 2 | 2 | 1 | - | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 53 | | | | | | | | | |
| Dunedin .. | 16 | 15 | - | 31 | 43 | 27 | 1 | 71 | 7 | 1 | - | 1 | 1 | 5 | 6 | 53 | 57 | 110 | 39 | 48 | - | 87 | 4 | 5 | 9 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 9 | 322 | | | | | | | | |
| Invercargill | 21 | 10 | - | 31 | 29 | 32 | - | 61 | 4 | 1 | - | 3 | 3 | 2 | 5 | 27 | 35 | 62 | 8 | 17 | - | 25 | 1 | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 190 | | | | | | | | |
| Grand Totals | 406 | 290 | 1 | 697 | 701 | 517 | 7 | 1 225 | 60 | 34 | 67 | 154 | 221 | 748 | 1 026 | 1 774 | 585 | 846 | 2 | 1 433 | 96 | 144 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 5 684 | | | | | | | |
| 1982 (Grand Totals) | (409) | (340) | - | (749) | (687) | (580) | - | (1 267) | (57) | (54) | (111) | (79) | (132) | (211) | (650) | (1 026) | (533) | (810) | - | (1 343) | (99) | (148) | (247) | (247) | (247) | (247) | (247) | (247) | (247) | (247) | (247) | (247) | (247) | (247) | (247) | (247) | (247) | (247) | (247) | (247) | (247) | (5 604) | | | | | | | |

*Sex Not Known

TABLE 9A

NOTIFIABLE DISEASES IN NEW ZEALAND FOR THE YEAR ENDED 31 DECEMBER 1983: SHOWING DISTRIBUTION BY MONTHS (ALL CASES)

| Diseases | E. 10 | | | | | | | | | | | |
|----------------------------------|-------|--------|-------|--------|-------|-----------|---------|----------|----------|--------|--------|-------|
| | 1979 | 1980 | 1981 | 1982 | Total | September | October | November | December | 1982 | 1981 | 1980 |
| Actinomycosis .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | 1 | .. | .. |
| Anoebiasis* .. | .. | .. | .. | 34 | 46 | .. | .. | .. | 4 | 34 | .. | .. |
| Ancylostomiasis .. | .. | .. | .. | 170 | 286 | .. | .. | .. | 2 | 170 | .. | .. |
| Brucellosis* .. | .. | .. | .. | 21 | 28 | .. | .. | .. | 3 | 21 | .. | .. |
| Campylobacter infection .. | .. | .. | .. | 769 | 1 251 | 121 | 120 | 187 | 159 | 769 | .. | .. |
| Cholera .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Congenital rubella .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. |
| Dengue fever .. | .. | .. | .. | 1 | 5 | .. | .. | .. | .. | 1 | .. | .. |
| Diphtheria .. | .. | .. | .. | .. | 4 | .. | .. | .. | .. | .. | .. | .. |
| Eclampsia .. | .. | .. | .. | 6 | 4 | .. | .. | 2 | .. | 6 | .. | .. |
| Encephalitis — post infection* | .. | .. | .. | 3 | 1 | .. | .. | .. | .. | 3 | .. | .. |
| Enteric Fever — | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Paratyphoid .. | .. | .. | .. | 3 | 13 | .. | .. | .. | .. | 3 | .. | .. |
| Typhoid .. | .. | .. | .. | 11 | 5 | .. | .. | .. | .. | 11 | .. | .. |
| Food poisoning .. | .. | .. | .. | 300 | 319 | .. | .. | .. | .. | 300 | .. | .. |
| Hepatitis A .. | .. | .. | .. | 750 | 674 | 18 | 3 | 16 | 45 | 750 | .. | .. |
| Hepatitis B .. | .. | .. | .. | 477 | 571 | 63 | 58 | 53 | 47 | 477 | .. | .. |
| Hepatitis non A or B .. | .. | .. | .. | 7 | 20 | 60 | 43 | 52 | 33 | 7 | .. | .. |
| Hydatid disease* .. | .. | .. | .. | 11 | 9 | 1 | 1 | 3 | 2 | 11 | .. | .. |
| Lead absorption† .. | .. | .. | .. | 2 | 6 | .. | .. | .. | 1 | 2 | .. | .. |
| Legionellosis .. | .. | .. | .. | 1 | 25 | .. | 1 | .. | .. | 1 | .. | .. |
| Listeriosis .. | .. | .. | .. | 15 | 5 | .. | .. | .. | 1 | 15 | .. | .. |
| Leprosy .. | .. | .. | .. | 3 | 7 | .. | .. | .. | 2 | 3 | .. | .. |
| Leptospirosis* .. | .. | .. | .. | 179 | 169 | 15 | 25 | 36 | 20 | 179 | .. | .. |
| Malaria .. | .. | .. | .. | 41 | 43 | 6 | 1 | 4 | 4 | 41 | .. | .. |
| Meningococcal infection .. | .. | .. | .. | 15 | 38 | 3 | 1 | 3 | 7 | 15 | .. | .. |
| Neonatal infection* — | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Eye infection due gonococcus .. | .. | .. | .. | 4 | 10 | 1 | 2 | .. | .. | 4 | .. | .. |
| Septicaemia .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. |
| Staphylococcal skin infection .. | .. | .. | .. | .. | 93 | 12 | 12 | 12 | 11 | .. | .. | .. |
| Psittacosis .. | .. | .. | .. | 3 | 3 | .. | .. | .. | 2 | 3 | .. | .. |
| Puerperal infection .. | .. | .. | .. | 26 | 328 | 29 | 15 | 21 | 12 | 26 | .. | .. |
| Ross River fever .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Salmonellosis* .. | .. | .. | .. | 1 261 | 995 | 56 | 56 | 66 | 65 | 1 261 | .. | .. |
| Schistosomiasis* .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Shigellosis* .. | .. | .. | .. | 215 | 1 73 | 8 | 11 | 14 | 18 | 215 | .. | .. |
| Taeniasis .. | .. | .. | .. | .. | 4 | .. | .. | .. | .. | .. | .. | .. |
| Tetanus .. | .. | .. | .. | 5 | 5 | .. | 1 | 1 | 1 | .. | .. | .. |
| Trachoma .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. |
| Tuberculosis — | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Pulmonary .. | .. | .. | .. | 280† | 244 | 18 | 15 | 21 | 19 | 280† | .. | .. |
| Occult .. | .. | .. | .. | 76† | 103 | 7 | 7 | 13 | 3 | 76† | .. | .. |
| Other forms .. | .. | .. | .. | 81† | 78 | 7 | 6 | 6 | 7 | 81† | .. | .. |
| Total .. | 6 79 | 10 86† | 19 81 | 4 798† | 5 557 | 431 | 384 | 60 7 | 475 | 4 798† | 5 855† | 5 429 |

*Since 1982, the name used by the Department of Health for this disease has been changed

†Amended annual totals

‡1983 figures are not comparable with previous years as the criteria for notification have changed

TABLE 9B

NOTIFIABLE DISEASES IN NEW ZEALAND FOR THE YEAR ENDED 31 DECEMBER 1983: SHOWING DISTRIBUTION BY HEALTH DISTRICTS (ALL CASES)

| Diseases | Wairarapa | Tairāpapa | Auckland | South Auckland | Hamilton | Rotorua | Gisborne | Napier | New Plymouth | Wanganui | Palmerston North | Hutt | Wellington | Nelson | Christchurch | Timaru | Dunedin | Invercargill | Total |
|--------------------------------|-----------|-----------|----------|----------------|----------|---------|----------|--------|--------------|----------|------------------|------|------------|--------|--------------|--------|---------|--------------|-------|
| Actinomycosis .. | ... | 1 | 5 | 24 | 7 | 1 | ... | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 |
| Amoebiasis .. | ... | 2 | 7 | 271 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 46 |
| Ancylostomiasis .. | ... | ... | ... | ... | 10 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 286 |
| Brucellosis .. | 1 | ... | ... | ... | 117 | ... | 3 | ... | 4 | 1 | 1 | 3 | ... | ... | 5 | 2 | 1 | 1 | 28 |
| Campylobacter infection .. | 33 | 110 | 99 | 74 | ... | 95 | 31 | 62 | 78 | 16 | 20 | 16 | 80 | 59 | 254 | 49 | 54 | 4 | 1 251 |
| Cholera .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Congenital rubella .. | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | 2 |
| Dengue Fever .. | ... | ... | 4 | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 5 |
| Diphtheria .. | ... | ... | ... | 2 | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 |
| Eclampsia .. | ... | ... | ... | 1 | 1 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 |
| Encephalitis—post infection .. | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| Enteric Fever— | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Paratyphoid .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Typhoid .. | ... | ... | ... | 2 | 1 | 1 | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... |
| Food poisoning .. | ... | ... | 234 | 8 | 4 | 8 | 3 | 11 | 2 | ... | ... | 1 | 3 | 3 | 36 | 4 | 1 | ... | 319 |
| Hepatitis A .. | 38 | 56 | 77 | 68 | 68 | 66 | 28 | 24 | 29 | 14 | 16 | 19 | 33 | 15 | 68 | 12 | 29 | 14 | 674 |
| Hepatitis B .. | 32 | 33 | 60 | 43 | 54 | 56 | 18 | 27 | 9 | 24 | 22 | 52 | 28 | 14 | 71 | 11 | 6 | 11 | 571 |
| Hepatitis non A or B .. | 1 | 3 | 2 | 2 | 1 | 1 | ... | ... | 1 | 1 | ... | 3 | 1 | ... | ... | 1 | 2 | 1 | 20 |
| Hydatid disease .. | ... | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | 1 | 1 | ... | ... | 3 | 1 | ... | ... | 9 |
| Lead absorption .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 6 | ... | 6 |
| Legionellosis .. | 1 | 1 | ... | ... | 2 | 2 | ... | 1 | ... | ... | 13 | 4 | 10 | ... | 2 | ... | 1 | 1 | 25 |
| Listeriosis .. | ... | ... | ... | 1 | 2 | ... | ... | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 5 |
| Leprosy .. | ... | 1 | 3 | 1 | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | 7 |
| Leptospirosis .. | 34 | 2 | 2 | 7 | 51 | 7 | 2 | ... | 23 | 4 | 13 | 5 | 2 | 11 | 2 | 1 | 3 | ... | 169 |
| Malaria .. | ... | 5 | 6 | 6 | 2 | 5 | ... | 2 | 2 | 1 | ... | 2 | 4 | 1 | 3 | 2 | ... | 2 | 43 |
| Meningococcal infection .. | 1 | 8 | 2 | 3 | 4 | 2 | 1 | 3 | 1 | ... | 1 | ... | 5 | 1 | 5 | ... | 1 | ... | 38 |
| Neonatal infection— | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Eye infection due | ... | ... | 2 | 6 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 10 |
| gonococcus .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | 2 |
| Septicaemia .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Staphylococcal skin | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 18 | ... | 7 | ... | ... | ... | ... | 93 |
| infection .. | ... | 2 | ... | 1 | 1 | 63 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 |
| Psittacosis .. | ... | 1 | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | 15 | 8 | ... | 54 | ... | ... | ... | 328 |
| Puerperal infection .. | 6 | 2 | ... | 5 | 123 | 114 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Ross River fever .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Salmonellosis .. | 47 | 90 | 118 | 136 | 163 | 61 | 24 | 22 | 37 | 27 | 17 | 33 | 35 | 49 | 59 | 22 | 47 | 8 | 995 |
| Schistosomiasis .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Shigellosis .. | 1 | 13 | 25 | 30 | 28 | 17 | 13 | 3 | 6 | 2 | 1 | 10 | 10 | ... | 10 | 1 | 3 | ... | 173 |
| Taeniasis .. | ... | ... | ... | 4 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 4 |
| Tetanus .. | ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 5 |
| Trachoma .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Tuberculosis— | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Pulmonary .. | 7 | 14 | 40 | 40 | 16 | 14 | 5 | 6 | 4 | 7 | 3 | 14 | 30 | 3 | 20 | 5 | 14 | 2 | 244 |
| Occult .. | ... | 9 | 11 | 30 | 22 | ... | ... | 1 | ... | ... | ... | ... | 6 | ... | 16 | ... | 7 | 1 | 103 |
| Other forms .. | 2 | 2 | 11 | 10 | 7 | 4 | 3 | 5 | ... | 1 | 2 | 4 | 8 | 1 | 8 | 2 | 3 | 4 | 78 |
| Total .. | 205 | 355 | 712 | 778 | 687 | 522 | 132 | 170 | 198 | 99 | 99 | 202 | 266 | 167 | 623 | 114 | 178 | 50 | 5 557 |

TABLE 9C

NOTIFIABLE DISEASES IN NEW ZEALAND FOR THE YEAR ENDED 31 DECEMBER 1983: SHOWING DISTRIBUTION BY AGE AND SEX (ALL CASES)

| Diseases | Under 1 Year | | 1 and Under 5 | | 5 and Under 10 | | 10 and Under 15 | | 15 and Under 25 | | 25 and Under 45 | | 45 and Under 65 | | 65 and Over | | Total | | Total |
|-----------------------------|--------------|-----|---------------|-----|----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|-------------|-----|-------|-------|-------|
| | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | |
| Actinomycosis .. | ... | ... | ... | 1 | ... | ... | 13 | ... | ... | 5 | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| Anoebiasis .. | ... | ... | ... | 1 | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 46 |
| Ancylostomiasis.. | ... | 1 | ... | 6 | ... | ... | 23 | ... | ... | 74 | ... | ... | ... | ... | ... | ... | ... | ... | 286 |
| Bruceellosis .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 | ... | ... | ... | ... | ... | ... | ... | ... | 28 |
| Campylobacter infection | ... | 18 | ... | 116 | ... | ... | 75 | ... | ... | 137 | ... | ... | ... | ... | ... | ... | ... | ... | 1 251 |
| Cholera .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Congenital rubella | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Denique Fever .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 |
| Diphtheria .. | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 |
| Eclampsia .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 |
| Encephalitis—post infection | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 |
| Enteric Fever— | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| Paratyphoid .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Typhoid .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Food poisoning .. | ... | ... | ... | 3 | ... | ... | 88 | ... | ... | 68 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Hepatitis A .. | 1 | ... | ... | 5 | ... | ... | 43 | ... | ... | 104 | ... | ... | ... | ... | ... | ... | ... | ... | 319* |
| Hepatitis B .. | 1 | 1 | ... | 2 | ... | ... | 44 | ... | ... | 118 | ... | ... | ... | ... | ... | ... | ... | ... | 674 |
| Hepatitis non A or B | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 571 |
| Hydatid disease.. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 20 |
| Lead absorption | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 9 |
| Legionellosis .. | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 6 |
| Listeriosis .. | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 |
| Leprosy .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Leptospirosis .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Malaria .. | ... | ... | ... | 3 | ... | ... | 1 | ... | ... | 39 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Meningococcal infection | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 6 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Neonatal infection— | 7 | 5 | 3 | 1 | ... | ... | ... | ... | ... | 5 | ... | ... | ... | ... | ... | ... | ... | ... | 38 |
| Eye infection due | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| gonococcus .. | 6 | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 10 |
| Septicaemia .. | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 |
| Staphylococcal skin | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| infection .. | ... | 42 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Psittacosis .. | 51 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 93 |
| Puerperal infection | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 |
| Ross River fever | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 328† |
| Salmonellosis .. | 53 | 36 | 123 | 99 | 61 | 47 | 41 | ... | ... | 99 | 115 | 87 | 38 | 43 | 19 | 16 | ... | ... | ... |
| Schistosomiasis.. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Shigellosis .. | 2 | 5 | 11 | 12 | 18 | 6 | 9 | ... | ... | 17 | 25 | ... | ... | ... | 2 | 2 | ... | ... | ... |
| Taeniasis .. | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 173 |
| Tetanus .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 |
| Trachoma .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 5 |
| Tuberculosis— | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Pulmonary .. | ... | 1 | 4 | 2 | 2 | 1 | 3 | ... | ... | 7 | 39 | 29 | 43 | 28 | 38 | 24 | 146 | 98 | 244 |
| Occult .. | 1 | 3 | 3 | 4 | 11 | 7 | 29 | ... | ... | 4 | 1 | 6 | ... | 1 | ... | ... | 49 | 54 | 103 |
| Other forms .. | ... | 1 | 1 | 2 | ... | ... | 2 | ... | ... | 5 | 16 | 19 | 12 | 10 | 4 | 2 | 40 | 38 | 78 |
| Total .. | 151 | 118 | 311 | 262 | 240 | 121 | 364 | 175 | 708 | 633 | 838 | 688 | 331 | 222 | 117 | 109 | 3 087 | 2 470 | 5 557 |

*27 males and 19 females ages not stated.
†123 females ages not stated.

TABLE 10
MASS X-RAY EXAMINATIONS 1979-83

| Year | | | Number Examined | Number of Active Tb Cases Found* | Active Cases per 1000 Examined | Number of Notified Pulmonary Tb | Active Cases Found per 100 Notified Pulmonary Tb |
|------|----|----|--------------------|--|--------------------------------------|---------------------------------------|---|
| 1979 | .. | .. | 168 689 | 40 | 0.24 | 348 | 11.5 |
| 1980 | .. | .. | 162 433 | 24 | 0.15 | 267† | 9.0 |
| 1981 | .. | .. | 144 005 | 33 | 0.23 | 268 | 12.3 |
| 1982 | .. | .. | 131 147 | 27 | 0.21 | 283 | 9.5 |
| 1983 | .. | .. | 104 322 | 25 | 0.24 | 244 | 10.2 |

*Includes contacts of active Tb cases: 1979-8, 1980-3, 1981-2, 1982-2, 1983-8.
†Excludes 42 cases of pulmonary Tb among Indo-Asian refugees

TABLE 11
ATTENDANCES AT OCCUPATIONAL HEALTH CENTRES 1983

| District | Centre | Attendances | | |
|------------------------------|----------------------------------|--------------------|-------------------|--------------------|
| | | First | Reattendance | Total |
| Whangarei | Okara | 596 | 415 | 1 011 |
| Auckland | Penrose | 8 769 | 2 780 | 11 549 |
| | Quay Street | 2 027 | 2 201 | 4 228 |
| | Rosebank Road | 1 499 | 1 168 | 2 667 |
| | Mt Maunganui | 767 | 278 | 1 045 |
| Rotorua | Petone | 2 607 | 1 416 | 4 409 |
| Hutt | Glasgow Wharf | 1 482 | 241 | 1 723 |
| Wellington | Lyttelton | 1 227 | 458 | 1 717 |
| Christchurch | Woolston | 619 | 220 | 839 |
| | Foreshore | 744 | 125 | 869 |
| | Kaikorai Valley— Green Island | 119 | 12 | 131 |
| Totals 1983 (Totals 1982) | | 20 456 (19 084) | 9 314 (12 399) | 30 188 (31 481) |

TABLE 12
TUBERCULIN TESTING AND BCG VACCINATION IN POST-PRIMARY SCHOOLS 1983

| <i>District*</i> | | <i>Number Heaf Tested</i> | <i>Number BCG Vaccinated</i> | <i>Number Heaf Positive†</i> | <i>Percentage Heaf Positive</i> | <i>Number Found to Have Clinical Tuberculosis</i> |
|------------------|----|-----------------------------------|--------------------------------------|--------------------------------------|---|---|
| Whangarei | .. | 1 103 | 1 061 | ... | 0.0 | ... |
| Takapuna | .. | 5 237 | 4 479 | 2 | 0.1 | 8 ‡ |
| Auckland | .. | 4 171 | 3 878 | 1 | 0.1 | 10 ‡ |
| South Auckland | .. | 5 534 | 5 223 | 4 | 0.1 | ... |
| Hamilton | .. | 5 127 | 4 985 | 17 | 0.3 | ... |
| Rotorua | .. | 3 841 | 197 | 1 | 0.1 | 1 |
| Gisborne | .. | 1 257 | 1 164 | 2 | 0.1 | 1 |
| Napier | .. | 2 741 | ...§ | 8 | 0.3 | 1 |
| Wanganui | .. | 228 | 217 | ... | 0.0 | ... |
| Wellington | .. | 1 667 | 1 492 | 1 | 0.1 | 1 |
| Total | .. | 30 906 | 22 696 | 36 | 0.1 | 22 |

*Routine tuberculosis testing was discontinued in the South Island in 1976 and in New Plymouth, Palmerston North, and Hutt districts in 1980
†Heaf positive represents +++ and ++++ reactions.
‡Includes ++ reactions.
§BCG vaccination no longer carried out in Napier district.

TABLE 13
NEW CASES OF TUBERCULOSIS, SHOWING INCIDENCE BY FORM OF DISEASE, RACE AND SEX, WITH NUMBERS AND RATE PER 10 000 ESTIMATED MEAN POPULATION, 1983

| | | <i>Other</i> | | | <i>Maori</i> | | | <i>Pacific Islander</i> | | |
|-------------|----|--------------|----------|----------|--------------|----------|----------|-------------------------|----------|----------|
| | | <i>M</i> | <i>F</i> | <i>T</i> | <i>M</i> | <i>F</i> | <i>T</i> | <i>M</i> | <i>F</i> | <i>T</i> |
| Pulmonary | .. | 87 | 58 | 145 | 38 | 28 | 66 | 19 | 14 | 33 |
| | | 0.62 | 0.41 | 0.52 | 2.72 | 1.99 | 2.35 | 4.05 | 3.05 | 3.56 |
| Other forms | .. | 23 | 20 | 43 | 13 | 16 | 29 | 4 | 2 | 6 |
| | | 0.16 | 0.14 | 0.15 | 0.93 | 1.14 | 1.03 | 0.85 | 0.44 | 0.65 |
| Occult | .. | 39 | 29 | 68 | 7 | 17 | 24 | 3 | 8 | 11 |
| | | 0.28 | 0.20 | 0.24 | 0.50 | 1.21 | 0.85 | 0.64 | 1.74 | 1.19 |
| Total 1983 | .. | 149 | 107 | 256* | 58 | 61 | 119 | 26 | 24 | 50† |
| | | 1.07 | 0.76 | 0.91 | 4.15 | 4.33 | 4.24 | 5.55 | 5.23 | 5.39 |
| Total 1982 | .. | 142 | 115 | 257 | 59 | 51 | 110 | 37 | 33 | 70 |
| | | 1.02 | 0.81 | 0.92 | 4.23 | 3.62 | 3.92 | 7.89 | 7.20 | 7.55 |

*The race breakdown is: European—187; Kampuchean—28; Vietnamese—17; Chinese—10; Indian—7; Filipino—2; Malaysian—2; Burmese—1; Laotian—1; Papua New Guinean—1.
†The race breakdown for Pacific Islanders is: Samoan—22; Cook Island Maori—15; Tongan—10; Niuean—3.

TABLE 14

| | Gonorrhoea | | | Syphilis | | | Non-specific Urethritis | | | | | | Trichomoniasis | | | Scabies | | | Genital Warts | | | Candidiasis | | | Herpes Genitals | | | Pubic Lice | | | Mollusum Contagiosum | | |
|------------------|------------|-----|------|----------|----|----|-------------------------|-----|------|----|-----|-----|----------------|-----|----|---------|-----|-----|---------------|-----|-----|-------------|-----|-----|-----------------|-----|----|------------|-----|----|----------------------|--|--|
| | M | | F | T | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Auckland | 368 | 172 | 540 | 25 | 7 | 32 | 785 | 28 | 8 | 13 | 0 | 93 | 93 | 18 | 5 | 23 | 279 | 87 | 366 | 81 | 277 | 358 | 238 | 137 | 375 | 48 | 5 | 53 | 47 | 8 | 55 | | |
| South Auckland | 62 | 56 | 118 | 2 | 3 | 5 | 94 | 9 | 103 | 0 | 27 | 27 | 27 | 2 | 0 | 2 | 30 | 18 | 48 | 16 | 41 | 57 | 31 | 14 | 45 | 6 | 7 | 13 | 2 | 1 | 3 | | |
| Hamilton | 35 | 25 | 60 | 4 | 6 | 10 | 114 | 7 | 121 | 3 | 14 | 17 | 17 | 0 | 0 | 0 | 14 | 14 | 28 | 1 | 12 | 13 | 16 | 16 | 32 | 4 | 1 | 5 | 0 | 0 | 0 | | |
| Gisborne | 29 | 19 | 48 | 1 | 3 | 4 | 37 | 10 | 47 | 0 | 8 | 8 | 8 | 0 | 0 | 0 | 5 | 4 | 9 | 2 | 4 | 6 | 0 | 5 | 5 | 2 | 1 | 3 | 0 | 0 | 0 | | |
| Napier | 63 | 47 | 110 | 0 | 1 | 1 | 67 | 17 | 84 | 0 | 4 | 4 | 4 | 2 | 0 | 2 | 12 | 11 | 23 | 1 | 10 | 11 | 6 | 7 | 13 | 7 | 8 | 15 | 2 | 0 | 2 | | |
| Hastings | 57 | 35 | 92 | 2 | 0 | 2 | 70 | 14 | 84 | 0 | 11 | 11 | 11 | 0 | 0 | 0 | 15 | 7 | 22 | 3 | 18 | 21 | 16 | 8 | 24 | 3 | 2 | 5 | 2 | 0 | 2 | | |
| New Plymouth | 29 | 14 | 43 | 1 | 1 | 2 | 99 | 33 | 132 | 1 | 10 | 11 | 11 | 4 | 1 | 5 | 34 | 25 | 59 | 3 | 13 | 16 | 42 | 18 | 60 | 8 | 3 | 11 | 2 | 1 | 3 | | |
| Wanganui | 31 | 13 | 44 | 1 | 0 | 1 | 62 | 1 | 63 | 0 | 8 | 8 | 8 | 0 | 0 | 0 | 12 | 6 | 18 | 0 | 11 | 11 | 8 | 1 | 9 | 2 | 1 | 3 | 3 | 0 | 3 | | |
| Palmerston North | 69 | 23 | 92 | 1 | 0 | 1 | 159 | 0 | 159 | 0 | 9 | 9 | 9 | 1 | 0 | 1 | 20 | 6 | 26 | 8 | 17 | 25 | 14 | 3 | 17 | 10 | 3 | 13 | 2 | 1 | 3 | | |
| Wellington | 227 | 122 | 349 | 0 | 0 | 0 | 720 | 0 | 720 | 0 | 56 | 56 | 56 | 21 | 2 | 23 | 109 | 128 | 237 | 46 | 242 | 288 | 208 | 61 | 269 | 38 | 29 | 67 | 46 | 14 | 60 | | |
| Christchurch | 219 | 115 | 334 | 10 | 4 | 14 | 547 | 47 | 594 | 2 | 47 | 49 | 49 | 8 | 1 | 9 | 197 | 136 | 333 | 77 | 107 | 184 | 88 | 49 | 137 | 64 | 17 | 81 | 20 | 10 | 30 | | |
| Dunedin | 20 | 15 | 35 | 0 | 0 | 0 | 115 | 11 | 126 | 2 | 3 | 5 | 5 | 1 | 1 | 2 | 44 | 7 | 51 | 9 | 11 | 20 | 16 | 19 | 35 | 12 | 3 | 15 | 1 | 3 | 4 | | |
| Invercargill | 18 | 6 | 24 | 0 | 0 | 0 | 46 | 11 | 57 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 6 | 5 | 11 | 0 | 4 | 4 | 1 | 0 | 1 | 3 | 0 | 3 | 2 | 0 | 2 | | |
| Totals: | 1227 | 662 | 1889 | 47 | 25 | 72 | 2915 | 188 | 3103 | 8 | 290 | 298 | 298 | 59 | 10 | 69 | 777 | 454 | 1231 | 247 | 767 | 1014 | 684 | 338 | 1022 | 207 | 80 | 287 | 129 | 38 | 167 | | |
| 1983 | 1273 | 783 | 2056 | 60 | 26 | 86 | 3220 | 318 | 3538 | 29 | 346 | 375 | 375 | 72 | 14 | 86 | 678 | 405 | 1083 | 257 | 829 | 1086 | 616 | 298 | 914 | 218 | 92 | 310 | 99 | 30 | 129 | | |
| 1982 | 1355 | 854 | 2209 | 40 | 35 | 75 | 3262 | 0 | 3262 | 49 | 436 | 485 | 485 | 97 | 11 | 108 | 545 | 324 | 869 | 209 | 690 | 899 | 506 | 218 | 724 | 210 | 89 | 299 | 83 | 28 | 111 | | |
| 1981 | 1431 | 895 | 2326 | 69 | 19 | 88 | 3560 | 0 | 3560 | 41 | 426 | 467 | 467 | 111 | 8 | 119 | 567 | 357 | 924 | 203 | 645 | 848 | 512 | 161 | 673 | 223 | 84 | 307 | 54 | 19 | 73 | | |
| 1980 | 1560 | 924 | 2484 | 69 | 26 | 95 | 3198 | 0 | 3198 | 36 | 397 | 433 | 433 | 76 | 17 | 93 | 541 | 345 | 886 | 162 | 640 | 802 | 453 | 149 | 602 | 185 | 69 | 254 | 22 | 14 | 36 | | |
| 1979 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TABLE 15

NOTIFICATION OF DISEASES ARISING FROM OCCUPATION 1983

| | | | | | | Male | Female | Total |
|---|----|----|----|----|----|--------|------------|-------|
| 1. Skin diseases due to— | | | | | | | | |
| Mineral oils | .. | .. | .. | .. | .. | 8 | 1 | 9 |
| Grease | .. | .. | .. | .. | .. | 1 | — | 1 |
| Organic solvents | .. | .. | .. | .. | .. | 8 | 2 | 10 |
| Cement | .. | .. | .. | .. | .. | — | — | — |
| Chrome | .. | .. | .. | .. | .. | 6 | 1 | 7 |
| Resins and chemicals used in manufacture of plastics .. | .. | .. | .. | .. | .. | 3 | 2 | 5 |
| Hairdressing chemicals | .. | .. | .. | .. | .. | — | 1 | 1 |
| Other Chemicals | .. | .. | .. | .. | .. | 10 | 1 | 11 |
| Natural products—wool, tobacco, etc... .. | .. | .. | .. | .. | .. | 7 | 2 | 9 |
| Physical causes | .. | .. | .. | .. | .. | 1 | — | 1 |
| Other causes | .. | .. | .. | .. | .. | 10 | 2 | 12 |
| Subtotal | .. | .. | .. | .. | .. | 54 | 12 | 66 |
| 2. Diseases due to dusts, fumes, gases, vapours, or mist— | | | | | | | | |
| Lead poisoning | .. | .. | .. | .. | .. | 3 | — | 3 |
| Metal fume fever | .. | .. | .. | .. | .. | 10 | — | 10 |
| Organochlorine insecticide poisoning | .. | .. | .. | .. | .. | — | — | — |
| Organophosphorus insecticide poisoning | .. | .. | .. | .. | .. | 4 | — | 4 |
| Poisoning by other agricultural chemicals | .. | .. | .. | .. | .. | 2 | 1 | 3 |
| Poisoning by fumigants | .. | .. | .. | .. | .. | 4 | — | 4 |
| Poisoning by refrigerants | .. | .. | .. | .. | .. | — | — | — |
| Poisoning by other lung irritants | .. | .. | .. | .. | .. | 11 | — | 11 |
| Poisoning by other gases | .. | .. | .. | .. | .. | 7 | — | 7 |
| Poisoning by organic solvents | .. | .. | .. | .. | .. | 3 | — | 3 |
| Any other respiratory diseases* | .. | .. | .. | .. | .. | 26 | 1 | 27 |
| Any other condition caused by the above agents—other than respiratory | .. | .. | .. | .. | .. | 1 | — | 1 |
| Subtotal | .. | .. | .. | .. | .. | 71 | 2 | 73 |
| 3. Diseases due to physical agents— | | | | | | | | |
| Eye conditions not due to accident | .. | .. | .. | .. | .. | — | — | — |
| Hearing loss | .. | .. | .. | .. | .. | 645 | 34 | 679 |
| Other conditions | .. | .. | .. | .. | .. | 25 | 3 | 28 |
| Subtotal | .. | .. | .. | .. | .. | 670 | 37 | 707 |
| 4. Permanent damage to vision due to accident | .. | .. | .. | .. | .. | 6 | — | 6 |
| Subtotal | .. | .. | .. | .. | .. | 6 | — | 6 |
| 5. Diseases due to infectious agents— | | | | | | | | |
| Leptospirosis | .. | .. | .. | .. | .. | 133 | 12 | 145 |
| Undulant fever (brucellosis) | .. | .. | .. | .. | .. | 14 | 3 | 17 |
| Other† | .. | .. | .. | .. | .. | 146 | 10 | 156 |
| Subtotal | .. | .. | .. | .. | .. | 293 | 25 | 318 |
| Total cases | .. | .. | .. | .. | .. | 1 094 | 76 | 1 170 |
| (1982 Total cases) | .. | .. | .. | .. | .. | (753) | (36) | (789) |
| Sources of notifications— | | | | | | Number | Percentage | |
| Medical practitioners (Private) | .. | .. | .. | .. | .. | 490 | 41.0 | |
| Medical practitioners (Hospital) | .. | .. | .. | .. | .. | 73 | 6.1 | |
| Hospital laboratory | .. | .. | .. | .. | .. | 14 | 1.2 | |
| Private laboratory | .. | .. | .. | .. | .. | 8 | 0.6 | |
| Medical Officer of Health | .. | .. | .. | .. | .. | 446 | 37.4 | |
| Department of Labour | .. | .. | .. | .. | .. | 36 | 3.0 | |
| Other | .. | .. | .. | .. | .. | 127 | 10.7 | |
| Total notifications | .. | .. | .. | .. | .. | 1 194 | 100.0 | |

*includes 8 cases of asbestosis.

†includes 156 cases of orf.

TABLE 16

SUPERVISION OF WORKERS ENGAGED IN LEAD AND ELECTROPLATING PROCESSES 1983

| Lead Processes | | Electroplating Processes | | | | | | | | | | People Other- wise Affected | | |
|------------------|-------|--------------------------------------|---------------------|---------------------------|---------------------|------------------|------------------------------|-------|--------------------|-------|------------------------------|--------------------------------------|-----------------------|---------------------------|
| District | Firms | Workers Under Super- vision | Investi- gations | Workers Sus- pended | Firms Engaged in | | Workers Under Supervision | | Examinations | | People with Chrome Ulcers | | | |
| | | | | | Chrome- plating | Other Plating | Chrome- platers | Other | Chrome- platers | Other | On Hands | | On Nasal Septum | Other Parts of Body |
| | | | | | | | | | | | | | | |
| Whangarei | 16 | 78 | 7 | 1 | 2 | — | 1 | — | 4 | — | — | — | — | — |
| Takapuna .. | 18 | 77 | 17 | — | 12 | 2 | 37 | 7 | 97 | 14 | 1 | — | — | — |
| Auckland .. | 20 | 280 | 12 | 1 | 18 | 14 | 69 | 49 | 171 | 77 | 5 | 3 | 1 | 1 |
| South Auckland | 22 | 71 | 24 | 1 | 8 | 2 | 29 | 5 | 57 | 11 | — | — | — | 13 |
| Hamilton .. | 4 | 5 | 2 | — | 3 | 2 | 18 | 5 | 67 | 11 | 3 | 1 | — | 18 |
| Rotorua .. | 16 | 24 | — | — | 3 | — | 9 | — | 70 | — | — | — | — | — |
| Gisborne .. | 12 | — | 2 | — | 1 | — | 5 | — | 20 | — | — | — | — | — |
| Napier .. | 16 | 29 | — | — | 4 | 1 | 14 | 1 | 37 | — | — | — | — | — |
| New Plymouth | 19 | 44 | — | — | 2 | 6 | 3 | — | 7 | — | — | — | — | — |
| Wanganui .. | 10 | 18 | 1 | 1 | 1 | 1 | 3 | 4 | 12 | 8 | — | — | — | — |
| Palmerston North | 117 | 86 | 23 | — | 1 | 1 | 5 | — | 5 | — | — | — | — | — |
| Wellington.. | 22 | 136 | 2 | — | 3 | 5 | 13 | — | 34 | — | — | — | — | — |
| Hutt .. | 38 | 65 | 16 | — | 3 | 5 | 5 | 16 | 11 | 12 | — | 1 | — | 1 |
| Nelson .. | 18 | 74 | 3 | — | 3 | — | 7 | — | 28 | — | — | — | — | — |
| Christchurch | 71 | 517 | 26 | 3 | 9 | 5 | 62 | 7 | 150 | 11 | 1 | 1 | — | 10 |
| Timaru .. | 67 | 17 | 1 | 3 | 2 | 1 | 3 | 1 | 3 | — | — | — | — | — |
| Dunedin .. | 29 | 89 | 4 | 2 | 3 | — | 12 | — | 58 | — | — | — | — | — |
| Invercargill.. | 4 | 9 | — | — | 1 | — | 8 | — | 30 | — | — | — | — | — |
| 1983 Totals: | 519 | 1 619 | 140 | 12 | 79 | 45 | 303 | 95 | 861 | 144 | 10 | 6 | 1 | 43 |
| (1982 Totals:) | 619 | 1 904 | 404 | 14 | 76 | 34 | 356 | 84 | 937 | 179 | 2 | 5 | — | 43 |

TABLE 17
MEDICAL AND NURSING SERVICES IN PRIVATE INDUSTRIAL UNDERTAKINGS AND GOVERNMENT FACTORIES 1983

| Terms of Employment | Number of Doctors and Nurses Employed | Approximate Numbers of Employees in Industrial Units Covered | | | | | | | | Totals | |
|---|---|--|--------------------|----------------------|--------------------|----------------------|--------------------|----------------------|--------------------|----------------------|--------------------|
| | | 0-200 | | 201-500 | | 501-1000 | | More than 1000 | | All Units | |
| | | No. of Industries | Total Employees | No. of Industries | Total Employees | No. of Industries | Total Employees | No. of Industries | Total Employees | No. of Industries | Total Employees |
| 1. Industrial medical officers — | | | | | | | | | | | |
| (a) Medical officers on contract attracting up to 60 percent subsidy | 129 | 30 | 3 675 | 38 | 13 056 | 29 | 19 566 | 24 | 69 762 | 121 | 106 059 |
| (b) Medical officers on other contracts .. | 24 | 6 | 827 | 3 | 970 | 4 | 2 889 | 6 | 8 600 | 19 | 13 286 |
| All medical officers | 153 | 36 | 4 502 | 41 | 14 026 | 33 | 22 455 | 30 | 78 362 | 140 | 119 345 |
| 2. Industrial nurses — | | | | | | | | | | | |
| (a) Full-time* | 199 | 26 | 3 257 | 54 | 18 896 | 40 | 31 437 | 36 | 73 633 | 156 | 127 223 |
| (b) Part-time (more than 10 hours weekly) | 70 | 25 | 3 066 | 7 | 2 793 | 5 | 4 044 | 7 | 10 060 | 44 | 19 963 |
| All nurses | 269 | 51 | 6 323 | 61 | 21 689 | 45 | 35 481 | 43 | 83 693 | 200 | 147 186 |

*Industries which employ both full-time and part-time nurses are included under full-time only.

TABLE 18

FOOD SAMPLING 1983

| | | <i>Total Samples</i> | | <i>Non-complying Samples</i> | | <i>Food Complaints</i> |
|---------------------------------|----|----------------------|-----------------|------------------------------|----------------------------|------------------------|
| | | <i>Local</i> | <i>Imported</i> | <i>Local</i> | <i>Imported</i> | |
| Meat Products | .. | 2 389 | 48 | 309 | 5 | 278 |
| Dairy Products | .. | 4 097 | 111 | 454 | 31 | 217 |
| Beverages .. | .. | 585 | 52 | 92 | 7 | 84 |
| Fish Products | .. | 786 | 2 074 | 48 | 66 | 116 |
| Prepared Foods | .. | 890 | 68 | 162 | 2 | 149 |
| Dried Foods | .. | 90 | 699 | 15 | 159 | 150 |
| Containers | .. | 394 | 58 | 70 | 8 | 23 |
| Miscellaneous | .. | 334 | 199 | 51 | 52 | 490 |
| Totals | .. | 9 565 | 3 309 | 1 201 | 330 | 1 507 |
| Seizures for non-complying food | | .. | .. | <i>No.</i> 8 | <i>Value</i> \$2,516.97 | |

TABLE 19

ESTIMATED POPULATION OF HEALTH DISTRICTS AS AT 31 MARCH 1984

| <i>Health District</i> | | | | | | | | <i>Total Population*</i> |
|------------------------|----|----|----|----|----|----|----|--------------------------|
| Whangarei | .. | .. | .. | .. | .. | .. | .. | 118 300 |
| Takapuna | .. | .. | .. | .. | .. | .. | .. | 308 000 |
| Auckland | .. | .. | .. | .. | .. | .. | .. | 279 100 |
| South Auckland | .. | .. | .. | .. | .. | .. | .. | 276 700 |
| Hamilton | .. | .. | .. | .. | .. | .. | .. | 281 800 |
| Rotorua | .. | .. | .. | .. | .. | .. | .. | 209 800 |
| Gisborne | .. | .. | .. | .. | .. | .. | .. | 65 200 |
| New Plymouth | .. | .. | .. | .. | .. | .. | .. | 99 600 |
| Napier .. | .. | .. | .. | .. | .. | .. | .. | 129 200 |
| Wanganui | .. | .. | .. | .. | .. | .. | .. | 86 300 |
| Palmerston North | .. | .. | .. | .. | .. | .. | .. | 151 000 |
| Hutt .. | .. | .. | .. | .. | .. | .. | .. | 187 100 |
| Wellington | .. | .. | .. | .. | .. | .. | .. | 187 400 |
| Total, North Island | .. | .. | .. | .. | .. | .. | .. | 2 379 500 |
| Nelson | .. | .. | .. | .. | .. | .. | .. | 134 400 |
| Christchurch | .. | .. | .. | .. | .. | .. | .. | 342 300 |
| Timaru | .. | .. | .. | .. | .. | .. | .. | 105 200 |
| Dunedin | .. | .. | .. | .. | .. | .. | .. | 151 300 |
| Invercargill | .. | .. | .. | .. | .. | .. | .. | 117 300 |
| Total, South Island | .. | .. | .. | .. | .. | .. | .. | 850 500 |
| Total, New Zealand | .. | .. | .. | .. | .. | .. | .. | 3 230 000 |

*Due to rounding, figures may not add to exact totals.

TABLE 20
PHARMACEUTICAL BENEFITS

| Year Ended 31 March | Mean Population For Year Ended 31 March† | Number of Prescriptions Priced | Total Expenditure on Pharmaceutical Benefits | Total Expenditure on Prescriptions | Prescriptions Priced Per Head of Population | Average Cost Per Prescription | Average Cost of Pharmaceutical Benefits Per Head of Population |
|---------------------|--|--------------------------------------|--|---------------------------------------|---|----------------------------------|---|
| | (000 000) | (000 000) | \$(000,000) | \$(000,000) | | \$ | \$ |
| 1943* | .. | 1.64 | 1.12 | | 2.1 | 0.33 | 0.68 |
| 1945 .. | .. | 1.66 | 1.96 | | 3.0 | 0.40 | 0.94 |
| 1950 .. | .. | 1.88 | 4.08 | | 3.8 | 0.57 | 2.17 |
| 1960 .. | .. | 2.35 | 11.92 | | 6.2 | 0.83 | 5.07 |
| 1965 .. | .. | 2.63 | 17.73 | | 6.4 | 1.06 | 6.75 |
| 1970 .. | .. | 2.79 | 27.31 | | 6.8 | 1.44 | 9.79 |
| 1975 .. | .. | 3.01 | 56.48 | | 7.3 | 2.54 | 18.45 |
| 1976 .. | .. | 3.12 | 69.87 | | 8.6 | 2.59 | 22.36 |
| 1977 .. | .. | 3.14 | 84.85 | | 8.1 | 3.34 | 27.02 |
| 1978 .. | .. | 3.13 | 97.71 | | 7.6 | 4.12 | 31.22 |
| 1979 .. | .. | 3.14 | 113.45 | | 7.7 | 4.68 | 36.04 |
| 1980 .. | .. | 3.13 | 132.80 | | 7.7 | 5.50 | 42.43 |
| 1981 .. | .. | 3.13 | 147.28 | 141.74‡ | 9.6 | 4.72§ | 47.05 |
| 1982 .. | .. | 3.16 | 174.07 | 166.39 | 8.8 | 5.95 | 55.09 |
| 1983 .. | .. | 3.19 | 196.10 | 187.06 | 8.5 | 6.91 | 61.47 |
| 1984 .. | .. | 3.23 | 220.64 | 210.74 | 8.9 | 7.31 | 68.31 |

*First full year. Pharmaceutical benefits scheme introduced 5 May 1941.

†Source: Department of Statistics.

‡Shown separately for the first time in 1981. Supply orders account for the balance of expenditure on pharmaceutical benefits.

§Prior to 1981 the average cost per prescription was based on total pharmaceutical benefit expenditure divided by the number of priced prescriptions. From 1981 onwards the average cost per prescription is derived from total expenditure on prescriptions.

||Provisional, subject to revision when accurate figures are released by the Department of Statistics.

